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TRADE DEPRESSION

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IN THE COMMERCIAL REALIZATION OF
HOME-GROWN PRODUCE*

BY

D. TALLERMAN

AUTHOR OF "AVAILABLE FOOD FOR THE PEOPLE," "HOW TO MAKE FISH CHEAPER,"
"DEAR MEAT, ITS CAUSE AND REMEDY," ETC., ETC., ETC.

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MAY THE ADVANTAGES POINTED OUT BE SPEEDILY REALIZED.

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June, 1889.

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PREFACE.

TO THE READER,

Whatever your political views may be, the contents of the following pages will accord with them. If perused in a critical spirit kindly bear in mind that I claim no pretension to literary ability. If i's are not dotted, and t's not crossed, it may be set down as the practice of the college of life where I have passed many years as an ardent student; if the same matter is referred to more than once, it is because my work has been written that it might be read and understood by that most narrow-minded, bigoted, prejudiced, and stubborn class, the British Farmers—to create any impression on whose minds it became necessary that each branch of the subject should be complete in itself and unrefutable. With this object in mind, I have endeavoured to point out the condition of things into which they have drifted, and why they have done so. When it is clearly seen that our agricultural

industry is being carried away by a strong under-current, and the direction in which it flows becomes known, then farmers may determine to alter the course they are pursuing, and steer one that will bring prosperity within their reach.

Among other things it will be noted—

1st. That at the present time the national productions of *both animal and cereal foods are considerably less than they were a few years since.*

2nd. That home producers, who are in the midst of forty million of consumers, are successfully driven from their own markets by the farmers of remote countries, who are handicapped by dear labour and heavy transit charges.

3rd. That with the wholesale cost of foods at a nominal price, a considerable portion of the people are poorly fed, and their natural physique deteriorating.

4th. That while a section of the industrial classes—having acquired a concentrated purchasing power exceeding thirty-four million pounds sterling annually—send agents abroad to purchase from foreign farmers at higher prices than they could procure similar commodities of a better quality from home farmers.

These extraordinary anomalies in our social

system are distinctive in character, each one being sufficient in itself to account for the prevailing agricultural and industrial depression. Far reaching as these difficulties are, they are traceable to one simple cause, viz. the disorganization of our farmers, and are thus capable of prompt and speedy removal, whenever they become alive to their position, and act in accordance to the dictates of common sense.

Meanwhile, having surveyed the national agricultural productive position in their several departments from a commercial standpoint, and suggested some of the directions where advantages are derivable, I venture with confidence to submit these materials for thought to minds of "light and leading," and invite their co-operation to give them practical effect.

D. TAILERMAN.

50, Redcliffe Road, London, S.W.

June 6th, 1889.

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THE ANOMALIES OF OUR FOOD DISTRIBUTION.

BOOK THE FIRST.

CHAPTER I.

DRIFTING—A BOOK OF ANOMALIES.



AGRICULTURAL distress and Trade depression. To what are they due and how can they be remedied are momentous questions that embrace the welfare of the nation, and are being differently construed by the members of every political party that constitute the large population of these small islands.

Free traders, Fair traders and Fiscal reformers, Conservatives, Liberals and Radicals, may each enjoy their own opinions with self-satisfaction ; but none of the enunciated views of their representative men will in any way effect the desired result of improving the present desperate position into which our Agricultural and Industrial classes have gradually drifted

solely, in the first place, from a want of attention on the part of the agricultural classes to the radical changes that have taken place in the manners, habits, and requirements of the people, which are owing to the variations that have been made in the occupations of the working classes, consequent upon the large development of manufacturing and mining industries ; and in the second place, from the non-recognition, on the part of the industrial classes, of their own interest and duty to give a well-defined and decided preference to the consumption of home-grown produce, in all instances where it is procurable upon terms and conditions equal to those of imported produce.

This is a view to which the most pronounced Free trader will not object, and there are few who upon examination will not fully realize the injustice of the prevailing practices, which cause higher prices to be paid for imported produce than are realized by our own farmers for home-grown foods.

The remedies will not be found in any political direction, inasmuch as the evils have sprung solely from social and commercial causes, and it is from these alone that relief can be obtained.

There is a well-known natural law from

which we gather the recognized principle, that a perfect knowledge of a disease is essential to its proper treatment and effectual cure.

It is in accordance with this well understood rule that it is necessary to deal with the conditions that govern our home agriculture and trade, in order to learn how the difficulties have arisen, and why they continue to develop themselves, as well as the means by which they may be removed.

In following out this course, we do not come into conflict with the many opinions that prevail in connection with the subject of food distribution; for it will be found that whatever views the holders take, that they, without trenching upon their own political opinions, may unreservedly concur in the social and commercial aspects of the position to which, possibly for the first time, their attention is directed; these being founded upon the extraordinary and inexplicable condition into which the Agricultural and Industrial classes have drifted.

At the outset I must declare that I in no way agree with the generally held opinion that we cannot provide ourselves with all the food we require from our own soil, and would remind those who think otherwise, that so far as

meat is concerned, the importations, either in a live, dead, or preserved form from America, the Colonies, and the Continent, are comparatively of a recent date, and that prior to 1840, when the first cattle were received from the Continent, we readily provided all the meat that the people wanted, while farmers made ample profits on much lower prices than they now receive.

It will not be asserted in any direction that the improvements in agriculture during the past fifty years have not enabled an improved yield of meats to be obtained from animals, equal to the increased population that has accrued during that period.

In the cultivation of wheat, in former years not only was there a much larger average area under crop than at present, but the increased yield per acre that farmers now obtain by high-class farming, if practised upon the same area that it was fifty years ago, would in itself, except in bad seasons, go far towards supplying the increased population of the country.

But I go farther than simply to maintain that we can produce all the food we require, and unhesitatingly assert that we do at present grow all the foods our people could consume under a reasonable course of procedure, and in the following pages propose to show that by a series of anomalous arrangements, that have

crept into practice in several directions, how we wilfully waste nearly as much food as we import, the consequence of which being that our farmers deprive themselves of thirty to forty millions sterling every year, which sum would be an addition to their profits. At the same time an equal amount is drained out of the country annually to pay for foreign foods that are unnecessarily brought into it, and this provides payment for labour in foreign lands instead of furnishing employment to our own artisans. It is entirely owing to these circumstances that our agriculturists suffer from distress, and our industrial classes from depression.

If both classes would take steps to remedy the palpable evils of distribution and realization, and at the same time give some attention to the further advantages derivable from the effective and economical improvements, that might be introduced in the preparation of foods, the results would be of supreme importance.

That the exact position I assume may be clearly understood, I propose to treat the anomalies that exist in each branch of the subject separately, and thus point out the erroneous forms of procedure in connection with it—the waste or loss that occurs by it,

together with its value, and how each particular loss may be avoided.


The principal subjects upon which I shall dwell are,—

1. The Anomaly of London's Markets: what they are and might be.
2. The Anomaly of the London Live Cattle Market.
3. The Anomaly of the Dead Meat Market.
4. The Anomaly of the Irish Cattle Trade.
5. The Anomaly of Live Stock Preparation.
6. The Anomaly of the Farmers' Waste of Offal.
7. The Anomaly in the sale of Boiling Joints.
8. The Anomaly in the Waste of "Bone Material."
9. The Anomaly of Shrinkage.
10. The Anomaly of converting Portions of each Animal into Manufacturing instead of Food purposes.
11. The Anomaly of Preventable Diseases.
12. The Anomaly of indiscriminate Sale.
13. The Anomaly of Packing Goods in Bulk.
14. The Anomaly of Unutilized Securities.
15. The Anomaly of consuming Imported and discarding Home-grown Wheats.
16. The Anomaly of high prices for Foreign and low prices for Home-grown Flour.
17. The Anomaly of consuming White Meal instead of Whole Meal Bread.
18. The Anomaly of Cheese Making.
19. The Anomaly of Home-made Butters.
20. The Anomaly of Milk Collection and Distribution.
21. The Anomaly of wasting our own Fruit and purchasing Foreign.
22. The Anomaly of Industrial Co-operation

CHAPTER II.

Anomaly One.

LONDON MARKETS—WHAT THEY ARE.

HE inadequacy of the market accommodation in the Metropolis to facilitate the communication between the producers of the agricultural districts, and the consumers of the City, its outskirts and suburbs, upon an effective and economical basis, has long been a grievance from which the public have suffered.

From time to time efforts have been made to improve this condition of things with but little effect, for it has invariably been found that the vested interests of the existing institutions has been powerful enough at all times to resist the introduction of any proposed improvement by which they would suffer, however great may have been its necessity.

Thus we find the anomaly of the great City of the present day and its widely extended suburbs with a population of about four millions of people possessing but few more markets than

it had two or three centuries since when its population could be numbered by thousands, and its area was confined within narrow limits.

The recently published evidence received by the Royal Commission on market rights and tolls, contains many remarkable statements in connection with the management and conduct of existing markets, and the unauthorized courses pursued by those who control, and exercise rights in connection with them.

The cause which led to the origin of markets and the requirements they were intended to supply with special reference to London, were succinctly defined by the City Remembrancer in his evidence before the Commissioners "no less as to the necessity of providing victuals for those dwelling in towns than to the advantage which they afford to the rural population of disposing of the produce of their agricultural labours at a fair price" (question 351).

The judicious and extreme accuracy of the above description will be generally admitted, but its thorough inapplicability to the present condition of London, its markets and the rural population whose produce might be brought within reach of the people, is beyond question ; for our present markets, instead of furnishing the easiest and cheapest means by which the

farmers adjacent to the Metropolis might bring their produce directly within the reach of consumers, are so conducted that in the great corporation establishments of the City they are forbidden to enter, while in the districts outside the City the facilities of railway accommodation are utterly discarded, and all the heavy and comparatively costless vegetable food produce, is compelled to be carted to the three old centres of collection in Covent Garden, Spitalfields, and the Borough, that were established for the residents of their respective vicinities two or three centuries since, in order that those commodities should not be subjected to the cost and charges incidental to their having to be transferred a second time, or that middle-men would interpose in their distribution.

When the rights were granted for the existing markets, the rural population was resident within the area that at present forms the suburbs, and it is evident that as the population increased from time to time, the necessity for further markets was recognized and conceded, irrespective of any existing charters, rights, or privileges that might have been granted and in existence at the time ; thus notwithstanding the first known charter on the subject that was granted to the city of London, in the first year of

the reign of Edward the Third, 1327, which provides that no market shall be established within seven miles, market charters and privileges were granted in ancient days, to the sites referred to subsequently, all of which have been devoted to the sales of vegetables, and in modern times the Columbia, Shadwell, and South London markets have been authorized by Parliament.

In recognition of this public requirement, it may be noted that whenever Parliament, in recent years, has been disposed to grant market privileges within the metropolitan area, the corporation of the city of London, notwithstanding its charter and privileges, has raised no objection on its part, but contented itself by reserving its rights.

The difficulty of providing the people of London with adequate food supplies was fully recognized so far back as the reigns of Charles the Second and James the Second, and even before that date ; and the means by which it was proposed to deal with the subject, viz. "by limiting the size and spreading of London," was found to be ineffectual in its purpose, hence Spitalfields, Covent Garden, and the Borough markets, for vegetables were permitted to enter into competition with the Corporation markets.

The wide development of the metropolis and its marvellous extension, has however altered the character of the markets and the manner of doing business in them ; from being, as they then were, simply a defined site in an open street, where producers and consumers could meet, and directly trade with each other in a retail way for their personal and particular requirements, our markets have become centred in extensive buildings, which have been occupied by salesmen, through whom all transactions in produce must pass in a wholesale form in the first instance, the produce then mostly reverting to dealers and traders in one or more channels before it reaches the retail shopkeeper, who transfers it to the consumer in his own district.

The concentration of trade thus brought about has acted most prejudicially to the interests of the people, it having resulted in the introduction of middle-men, who being called into existence to render a service entitled to remuneration, must of necessity make a profit from their operations, and at the same time the additional labour incidental to transmission and realization, materially affects the charges and expenses incurred by the producers, and reduces the amount receivable by them, while the amount to be paid by the

consumer is largely increased by the same causes.

The Royal Commissioners have elicited many remarkable facts during the course of their inquiry, especially in connection with the Spitalfields Market, where it appears by their charter no definite sums are named as to what may be charged as a toll—that no published notice of the tolls has ever been issued—that the amounts claimed are what the lessee considers reasonable, and that the same amount is charged upon a waggon of market garden stuff whether it realizes fifty shillings or fifty pounds.

Also, that the Great Northern and Midland Railway Companies had opened and successfully established markets which “supplied the wants of a tremendous number of people with potatoes, &c.,” that opposition was raised to the Great Eastern Markets at Stratford, three and a half miles distant, and to the Bishopsgate Station—unless the tolls were paid to the lessee the same as if the produce came direct to Spitalfields.

The anomalies surrounding this market present a remarkable feature that could with advantage to the public have been brought under their notice long since, and will be found in the fact that not satisfied with the collection of tolls of no authorized sum at his own market, the lessee

of Spitalfields claimed, and as the price of his consent obtained, the right to tax food supplies received by the Great Eastern Railway, for their markets at Bishopsgate and Stratford, while no such claim is made against produce reaching the Great Northern and Midland Markets at their stations at King's Cross, which are also far within the seven-mile radius claimed.

Inasmuch as the Great Northern and Great Eastern Railway Companies jointly work the traffic over considerable districts, it appears an extraordinary feature in our railway and market system that a farmer on the lines may be permitted to forward his produce for free sale to King's Cross, but must be saddled with a charge upon each ton sent to Bishopsgate, where they must not be freely sold at all. The circumstances in connection with the King's Cross and St. Pancras markets prove the case up to the hilt, and point out the available remedy. They have drifted into their successful position by sheer force of the inherent advantages that they give to the people in the vicinity, and it is in that direction that a remedy will be largely found for our existing system of food distribution.

CHAPTER III.

LONDON MARKETS—WHAT THEY MIGHT BE.

UNDER these circumstances there remains but one course to adopt to bring producers and consumers into more direct communication, so as effectively to relieve the food of the people from the enormous burdens that it now unnecessarily bears, and that is to return to the natural course which our forefathers adopted, and utilize sites in all directions where producers may freely congregate at will, to which the consumers and retail traders of the vicinity may repair for what they require.

Existing markets may or may not be the best means for the disposal of all the food the people require. That cannot be adduced as a reason why facilities for further market accommodation should not be created where available, to such an extent as their inherent advantages would naturally develop.

Mr. Briggs, the solicitor for the lessee of Spitalfields Market, admitted this position before

the Royal Commission in his exhaustive reply to question 1497, in which, among other things, he stated that "According to the primary view of a market, a salesman was not wanted, it was a place where the actual grower met the actual consumer, but our modern civilization has introduced the salesman to act on behalf of the grower, and the greengrocer to buy on behalf of the consumer." "Multiply retail markets as much as you please, but do not multiply wholesale markets."

The measures to take for obtaining the remedy is to multiply markets in all directions, and let them find their own level for wholesale or retail business. As a matter of fact, modern civilization has had nothing to do with the creation of these middle-men systems in connection with food distribution, for in accordance with the ordinary laws of progress, the community has materially extended, while markets have remained stationary, so that the natural facilities for people readily obtaining their supplies of food, have not been permitted to enter into play as and where they were required.

The working-man's wife cannot walk from Limehouse to Spitalfields for the material for her husband's dinner, neither can the better half of the city clerk trudge from Brixton to the

Borough, or the servant of the city merchant travel from Hampstead to Covent Garden for the same purpose. Time and expense preclude these, and all of the parties should be able to obtain what they require, from a recognized centre of collection in their immediate vicinity.

Markets should not only be encouraged in connection with every railway station, but inducements should be offered to companies to provide ample facilities for the sale of produce direct from the trucks by farmers or their servants.

By these means an immense tract of country would be brought within reach of the metropolis, and the occupiers of the land, if induced by a reasonable tariff of rates, would speedily convert much of the farm-land into market-gardens, when a substantial addition would be made to the food of the people.

The evidence of Mr. W. Birt, the general manager of the Great Eastern Railway, confirms this view in a very striking manner.

After expressing the opinion, "I attach the utmost importance to all future markets being connected with a railway, because, if the market is connected with a railway, the trucks containing the vegetables can go into the market, and

the cost of carting from a railway station, as at present, to the market is so avoided."

With reference to the Bishopsgate Market, he says :—

"Now in the year 1880 the total weight of vegetables that we brought to London was 32,000 tons."

Q. "That is to say, brought to London for use anywhere, irrespectively of markets?"

"For use anywhere. The weight in 1881 was practically the same—33,000 tons; but in the year 1882, when our market was opened, the weight suddenly jumped up to 52,000 tons.

"It was open for six months in 1882, but for the whole of 1883. In 1883 there is another big jump from 52,000 to 66,000 tons; in 1885, to 79,000 tons; in 1886, to 82,000 tons; and in 1887, to 87,000 tons.

"In the year 1879 the Stratford Market was opened. The first perfect year of its opening was 1880, and in that year the weight of potatoes, roots, vegetables, and fruit received by rail at Stratford Market was 5000 odd tons; in the year 1881 it was 9000 tons; in 1882 it was 12,000 tons; in 1883, 12,000 tons; in 1884, 16,000 tons; in 1885, 19,000 tons; in 1886, 25,000 tons; and in 1887 it was 33,000 tons.

“ I am quite sure that if monopolies were abolished, competition would supply the want. Railway companies, I am sure, would go in for these markets, provided that other people did not go in for them ; and especially with us, it is so important that there should be these markets in order to enable us to help the producers in Norfolk and Suffolk and other of our counties.”

Coupling these facts with the evidence that “ the saving in cartage, &c., would be about 5s. per ton,” it cannot be doubted that the food of the residents of the metropolis is unnecessarily taxed by the tolls, stallages, &c., and the exclusive character of the existing markets, to such an extent as materially to affect the bulk of consumers ; and that, before all things, it is desirable our markets should be absolutely free in every sense that the word can imply, viz. not only free from tolls, but free also from rates, taxes, and other public charges, &c., the payment of which involves an enormous cost for the collection and verification of the small amounts ; the expenditure in this direction, as shown by published accounts, being little short of 100,000*l.* per annum ; which, in itself, constitutes an enormous and unnecessary tax on the food of the metropolis.

Without question, certain work and duties of a public nature must be performed in all markets involving expense. These being carried out by the authorities of the districts in which the markets are situated, should be paid for out of the public rates direct.

The course for prompt adoption to ensure a practical result would be for the Metropolitan Members of Parliament to meet, and deal with the subject on a non-political basis, by taking the necessary steps to introduce and carry a Bill that should declare all sites for Food Markets that may be selected, approved, and made free of toll, should be free of taxation and payments for gas, water, police, &c., subject to the condition, in the case of railway connections, that they should be free of charges for the terminus premises used; that the railway companies should adopt a reasonable truck rate, and convey free, farmers or their employés travelling with produce for the purpose of personally conducting its direct sale.

The sites that are at present completed as markets and available for this purpose are the Bishopsgate Market of the Great Eastern Railway, upon which upwards of 200,000/ has been expended, and which in addition to its direct connection with the Eastern Counties by

its main lines, is in communication with Kent, Surrey, and Sussex, *viâ* New Cross, by means of the East London Railway, and by its other suburban lines, may be in direct communication with the West London suburbs and agricultural districts, which being on the same level, could at a nominal cost be brought into direct communication with it by tram rails.

Sites that are easily procurable for the purpose of markets, and well situated are to be found in all directions. The most important is that of Coldbath. Fields, in Clerkenwell, consisting of about fourteen acres of land in a densely populated district, which has recently been acquired by Government for the Postal department. This site is situated within fifty yards of the Metropolitan railway, with which it could be advantageously brought into communication, and through it to all the main lines on the north and south of the Thames. The land is greater in extent than is required for postal purposes, and the completion of the railway connection would facilitate postal work, more especially that of its parcels department.

The goods station of the London and North-Western at Camden Town, of the South-Western at Nine Elms and Waterloo, the Bricklayers Arms Station of the South-Eastern

Railway, with the stations at Clapham Junction, Victoria, Addison Road, Westbourne Park, and many other places, could also be utilized with advantages to the several railway companies and the public.

Centres of collection or standings for trucks might be found in many places in proximity to railways, that could be brought into communication with them; notably with these is the Queen's Road, E., running from Dalston Junction to Hackney Road. This is a very broad road, about one mile in length, has very little traffic, and by laying rails on the road like those of an ordinary tramway, an extensive goods station or market would be at once available, and act as a feeder to Columbia Market, which could be brought into communication with it.


A course followed by the Legislature in this direction in the early part of the coming session, would clear the way for the County Councils who have been elected to occupy positions of influence and authority.



CHAPTER IV.

Anomaly Two.

THE LONDON LIVE CATTLE MARKET.

HE inquirer into our present system of meat distribution, is at the outset met by an anomaly of a most extraordinary character, arising in connection with the Live Cattle Market at Islington, where are collected, twice in each week, the home-bred animals to supply the 4,000,000 of inhabitants of the Metropolis and several country districts with their meat, in competition with the supplies of live stock that arrive at Deptford Market, from those foreign countries where disease is known to exist, and also of the consignments of dead meat, that reach the Central Market from the country and all parts of the world.

The British farmers who furnish the animals, unnecessarily handicap themselves with difficulties in a remarkable manner to contest these trades with their opponents, to which the Corporation who provide and conduct the markets further contribute, by the insufficient

facilities which they furnish, and as a result, they are slowly and surely losing ground in the struggle; so that notwithstanding all the inherent advantages enjoyed by the British farmers in having better quality meat, and in being in immediate contact with large centres of population, they continue to lose money in their business, while the producers of the foreign importations, surrounded as they are with extra difficulties and expenses, contrive to make a profit by their operations.

The longer this condition of things is allowed to continue, the weaker the British farmers' position will be; meanwhile that of their foreign competitors becomes daily stronger, and the further the inevitable contest is delayed, the more arduous will it be to dislodge them from their vantage-ground.

Upon examination the primary difficulty that will be found to exist in connection with this matter, arises from the money loss, due to the shrinkage in quantity, and deterioration in quality of the meat, from the animals sent to the market, owing to their being driven by road, or partly driven by road, and partly carried by rail from the farms to the market.

The individual loss on each farmer's live stock is dependent upon many surrounding

conditions ; but the total amount this reaches may be estimated by the known average shrinkage of weight in animals while travelling on country roads quietly, which has been ascertained to be eight pounds per day for each beast, and on the single journey by railway from Aberdeen to London five per cent. of its gross weight, so that in ordinary circumstances, taking three days as the usual time occupied by animals in travelling from their farms to the local markets or fairs and thence on to London, allowing two more days for their sale, transfer, and slaughter, five days elapse during which the animal has been unfairly treated, and at the minimum known shrinkage, its flesh has shrunk at least forty pounds in weight—not of hoofs, horns, or bones, but of the best, most nutritive, edible, and palatable portions of its carcase—a quantity that is considerably undervalued at sixpence per pound, or one pound sterling per beast ; this is an absolute unnecessary loss, that would not only be avoided by the animals being slaughtered in the vicinity of the districts where they are reared, but if they were properly cared for and dealt with, they would continue to increase in weight, while the still more serious damage arising from the depreciation in the condition of the meat, of an animal that has

travelled would also be saved. The nature and extent of this loss will be best understood from the graphic description of cattle on rail by the well-known veterinary authority, Professor Gamgee, who says,—

“A well-fed bullock, nursed in his stall, protected even from fierce sunlight, and as jealously guarded in his slumbers as an infant, is the worst possible specimen of a travelling quadruped. From the moment he is driven to the station his angularity is discovered; he packs badly; fright induces thirst not often quenched, and a diarrhœa not checked by the hustling and bustling, the hooting and bawling which are in so striking a contrast to the tender care bestowed on the beast whilst laying on the flesh which is so readily damaged on the road to market. Every hour, and every day, from the time fat animals are kept in a railway truck, steamboat, or public market, may be regarded as an hour or day of pain, torment, and waste.”

Mr. Andrew J. Lawson, writing to *The American Cultivator*, treats the matter less figuratively and more concisely. He says:—
“When a beef creature is driven up a shute and jammed into a cattle-car, his worry begins; the condition of his heart changes, his system

becomes feverish, and after he has ridden a thousand miles he has lost some flesh and considerable ambition; finally terminating his existence at an abattoir, where he is cut up into quarters for market."

Mr. G. T. Turner, in "Cattle Traffic and Cattle Diseases," writes:—"It may be taken for granted that, in addition to the contraction of disease during transit and spread of disease by transit, there is a very tangible loss to the country from the waste and constitutional disturbance which is the inevitable concomitant of a traffic in living animals by rail or sea."

It is hardly possible to determine the actual money value, of the depreciation in quality that thus takes place in the meat of animals so dealt with; but from the foregoing realistic description of the course of procedure, one farthing per pound, or one pound per beast, is the lowest estimate that can be fairly taken as the legitimate amount—a figure that is partly verified by the fact that sides of Scotch killed beef realize, as a rule, twopence per stone, or one farthing per pound, more in the Central London Market than town-killed meat, showing that not only is the loss considerable on the whole, but that the country-killed meat is preferred to that killed in town.

The English farmers have to realize the important fact, that notwithstanding all the skill, experience, and knowledge they bring to bear on the subject of cattle feeding, coupled with the ancient and well-known reputation of English meat, and the high character of the herds from which they are derived, their Scotch competitors do enter their markets largely with the meat of Irish-bred beasts, and at all times command the buyers, realizing at least twopence per stone, or one farthing per pound, more than they can for their English meat. To what cause other than the depreciation in condition through excessive travelling are these extraordinary results to be attributed?

The actual result from shrinkage is more readily determinable, and taking the minimum of 1*l.* per head, it shows that our farmers tax themselves to the extent of 2*l.* per beast, or 403,200*l.* per annum, on the number of animals [201,600 in 1887], that they send to the London market alone; with the addition of a proportionate amount for the shrinkage and depreciation that take place in sheep, the total loss from this thoughtless course of procedure must exceed 600,000*l.* annually, an enormous sum unnecessarily lost on the live animals that enter the London market, that would be avoided if

they followed the common-sense procedure of slaughtering their animals in a systematic manner in proximity to their farms ; therefore these are losses the farmers inflict upon themselves.

By following the proceedings in connection with the business, we see the further losses the market inflicts on them. Their animals are disposed of by the cattle salesmen to carcase and retail butchers at an agreed price per stone on the estimated weight to "sink the offal," that is to say, that the buyer of a live bullock simply pays the price that its two sides of beef are calculated to weigh after slaughter, all the other parts of the animal being given in. What the outcome of these parts may be is entirely a matter of opinion between the butcher who is the buyer and the salesman who sells as agent for the farmer. Every butcher and every salesman fancies he knows to a pound what an animal will dress to, that is, what the actual net weight of the meat after slaughter will be ; but in this mode of purchase the buyer has many opportunities of obtaining advantages in his business transactions, especially if the market be a full one, in the price, and in the estimated weight, while as the whole of the trade know that the animals at the market cannot be sent

away unsold, except at a loss, they have a decided advantage in the commercial position which they do not fail to utilize.

The sales being made in different directions, the provisions for slaughter are all isolated, and as a consequence each buyer has to do the best he can with what is called the offal of the animals.

The hides, hoofs, and horns are collected from the places of slaughter and forwarded to the salesmen of those articles. The fat is sent to the tallow-melters, the remaining portions are bought up by members of different trades, such as tripe-dressers, bone-boilers, neat's-foot oil makers, &c.

Many of the businesses that have sprung into existence out of this course of procedure were so thoroughly mismanaged and badly conducted in London that the legislature was compelled to interfere, the result being a declaration that the several trades were noxious to public health, and that their continuance in the metropolis must be prohibited, while those in existence were confined to certain districts, and in the future could only be carried on under restrictions.

Several of these isolated businesses which had competed with each other were recently con-

solidated into companies, and have thus become monopolies, so that the low value that a large portion of the beast has hitherto realized, is not likely to be increased until the existing system has been altered and improved.

The anomaly in this particular direction lies in the fact that a large portion of each beast, instead of being promptly dealt with while fresh and sweet, when it would have been a useful addition to the food supply of the nation, has been allowed to remain undealt with, until it has become offensive in condition, pernicious to health, and so seriously to deteriorate in value, that it must then be disposed of at a low price. Other portions of the animal that have a considerable value as food products are utilized, but only yield a nominal price, while at the same time that this is being done with portions of our home-grown beasts, the shippers of meat from America profitably utilize the whole of similar items from the animals they slaughter, which they prepare while fresh as margarines, brawns, potted or collared head, soups, pickled tripe, meat extracts, and in other consumable forms which enter largely into consumption in America, and are also shipped to this country, and purchased by our own people

to the extent of nearly one million sterling annually.

It is entirely owing to the isolated manner in which our farmers conduct their transactions, and the incompleteness with which the Cattle Market has been constructed that this ruinous system prevails. It compels a large portion of every animal that reaches the market to be utilized as material for conversion into soap and candles—that should form important additions to the food supply of the people; and taking into consideration the nutritive food constituents obtainable from bones and fat if properly treated while fresh, and the better value obtainable from the heart, tripe, liver, and other portions of the animal, if promptly cleaned and prepared, together with the larger returns that could be made from the legs, shins, necks, and coarse parts of beef if systematically dealt with, an increased value of at least from 40s. to 50s. per beast would be realized if the market were provided with effective appliances to allow for their preparation and the systematic conversion of the material upon a properly conducted basis were insisted upon; or better still if the market were entirely abolished and farmers were compelled to slaughter their beasts each in their own counties, and allowed only to send the

fresh meat to the dead-meat market at Smithfield, or sell it direct to the retail butcher. They would then be forced into a system that would directly yield them at least 4*l.* sterling per head more than they now receive for their cattle, which would furnish them with an additional million and a half sterling increased profit *annually* from this single source, but the same practice, if still further applied to live stock generally throughout the country, would realize for our farmers increased profits to the extent of several millions sterling *annually*.

At the same time the large addition that would thus be made to the quantity of our own home-produced food-supply, would render us to a large extent independent of those importations from abroad, which we at present receive in various fresh and preserved forms, and for which we pay several millions pounds sterling every year.

That the live-cattle market of the metropolis, which controls and influences all the other markets throughout the kingdom, should be conducted so as to reduce the value of home-grown live stock, and lead to the profitable importation of large supplies from abroad, is an incredible anomaly in our system of food distribution that most urgently requires

to be remedied. It furnishes ample evidence of the powerful influence of the vested interests that have grown into existence by force of circumstances, the representatives of which, by a tacit understanding upon an unwritten law, discourage and oppose every direct attempt at improvement.

The readiness with which the London live cattle market could be dispensed with, is shown by G. T. Turner, Esq., in his work on cattle traffic, in which the altered character of the trade of London butchers is dealt with. He says :—

“The actual difference would be that the whole, instead of the greater part, would be stopped at the water-side. There appear to be comparatively few London purveyors who slaughter their own cattle,—showing a marked tendency towards a dead-meat trade, carcasses being purchased from the wholesale or carcase butchers. On this subject Mr. Rudkin observes : “There are 5000 butchers in London, and there are about 1000 slaughter-houses ; therefore there are 4000 butchers who provide their customers with meat without having slaughter-houses at the back of their shops, and I cannot see why the other 1000 cannot do the same.”

CHAPTER V.

Anomaly Three.

THE DEAD MEAT MARKET.

IT has been left to the Corporation of the City of London, which claims to represent the most enterprising, commercial and influential community of the world, to formulate and successfully to carry into operation in the middle of the nineteenth century, a system of monopoly in connection with the meat supply of its inhabitants, that probably is without parallel in the municipal history of communities. It is not too much to say that the recent illegitimate assumption of power by the small parties interested, to control the food supplies of the people, is iniquitous in the extreme, and that so soon as the effects are perfectly understood by the public, they will not be suffered to exist for any lengthened period further.

The Corporation of London, by virtue of the charters granted to it by Edward III. in 1327,

and others, claims the right to provide and control the whole of the markets of the metropolis, with a few exceptions, within a given radius of its boundary. While it faithfully and honestly carried out the engagements, which those charters created, no one challenged that right, but so soon as it ignored, neglected, or misappropriated the duties imposed upon it by the charters it possesses, then it committed a breach of faith which demands that the Corporation shall lose the privileges that became vested with it.

The granting of the charters, proved the intention that the privileges were to be utilized wholly for the benefit and advantage of the public at large, and not for the advancement of the interests of private persons, either in an individual or collective capacity.

The natural understanding of a market, is that it must be a common meeting-place for producers and consumers, that they may meet under prescribed general regulations, and trade with each other; also upon the payment of certain tolls, buyers and sellers have the common right to do so, and for accommodation to be furnished them for the purpose.

Until within the last few years this was the practice in the markets of the City of London

the regulations being only such as the maintenance of law and order required in the meeting of an incongruous assembly. The tolls were supposed to be sufficient to cover the expenses necessitated by the regulations of the market, and were not for purposes of revenue, neither has it ever been claimed that the City authorities had the right or the power to place a direct or indirect tax upon the food of the people in any form however small. It did acquire the right to inflict a charge for a limited time on the coals and wine intended for the metropolis, the amount of which had to be applied to a specific purpose, and none other. It also controlled the metage on grain, which was a payment for a defined independent service rendered to the buyers and sellers of corn.

In the days of old the farmers of Middlesex, Essex, Suffolk, Kent, Surrey, or other counties, could kill their pigs, sheep, calves, or bullocks, and bring the meat into the London markets and sell it themselves, while they, their wives or daughters, could bring such poultry, eggs, or butter, as they thought fit, and freely dispose of them to the public in their own way, with no charge to meet beyond the payment of the prescribed toll, for which they

were entitled to access to the market and accommodation for the display of their produce. Such, however, is not the case now.

If a farmer or his wife have any produce to dispose of, they must, upon bringing or sending it to the London market for sale, surrender it to the hands of a salesman to sell for them, from the simple fact that the Corporation in its wisdom has deemed it wise to place the whole of the market accommodation in the hands of special tenants at a weekly rental, but upon a permanent tenure, the privileged few being under no restraint as to the extent of the confidence which they shall inspire producers with, or the amount of trade that they shall do.

Thus if a tenant simply pays his rent, and receives but one or two crates of meat per week, he still claims and has the right to sole occupation of this shop or stall, while the producer who wishes by himself or servant to sell his own produce direct to a consumer, can obtain no accommodation for doing so. The result of this course of procedure has been to vest the sole disposal of the meat supply of the metropolis and its vicinity in the hands of the few fortunate persons who have ingratiated themselves with the members of the sub-Markets Committee and secured possession of a shop

in the market ; these, beyond being subject to the general law that they shall not dispose of any diseased meat, are at perfect liberty to conduct their business as they please.

The result is that the Meat Market is registered to contain 154 tenants, and the Poultry and Provision Market 56, who according to the London Directory, describe themselves as follows :—

Tenants of the Meat Market—

149 Salesmen,
4 Carcase butchers,
1 Meat contractor ;

while those in the Poultry and Provision Market are set out as—

28 Meat salesmen,
12 Poultry salesmen,
13 Provision salesmen, and
3 Butter salesmen.

As to “salesmen,” that term does not correctly describe the character of the business the tenants are supposed to carry on, which should be that of agents for the sale on commission of produce consigned to them.

As a matter of fact, the major portion of these tenants receive little or no meat from farmers for sale, but are dealers or middlemen who employ themselves in the purchase of

meat from those to whom it is consigned for resale to retail butchers ; while others are carcase butchers or dealers, who buy live stock at the Islington Market, and, after slaughtering the animals, bring the meat to the Central Market for disposal.

This admission of dealers to the markets, to the exclusion of *bona fide* producers or their own agents, has resulted in the creation of a fictitious system by which the wholesale price of meat bears no relation to that at which it is retailed, and the effect of the importation of a number of illegitimate dealers designated “ *Bummarees* ” into the meat market has been to lessen the price to the producers, of all but the very primest meat on all occasions when the market is full, without providing for a corresponding reduction to the consumer.

The quantity of best quality meat, received at the market bears but a small proportion to the whole, the demand for it is always good, and its price is seldom affected.

The value of a position in the market, may be estimated by a calculation of the amount payable to the salesmen of the market as commission, upon the sale of the supply of meat received there, which, by the corporation’s own returns, appeared to be as follows :—

The meat received at the market in 1887 was 259,383 tons. This, at the average wholesale price of 6*d.* per pound, reached the value of 14,525,448*l.* The commission charged by the salesmen for their services ranges from 2½ per cent. upwards, but taking the minimum commission of 2½ per cent. only, it will be seen that the salesmen received between them under this head no less a sum than 363,136*l.* from the senders of meat, what the total amount reaches in which the producers are mulcted in by being deprived of their inalienable right to use the market, it is not possible to determine ; but assuming that the other receipts and profits of those engaged in redistribution are only five per cent., the amount together with the commission named, will exceed one million sterling, which it must be admitted is a large sum, of which the monopolists of the corporation of the City of London, annually deprive the meat producers of the country, by denying them access to the market and accommodation for the free sale of their own produce.

But the extraordinary position of things in connection with this market does not end with the exclusion of producers. Consumers receive similar treatment, and find the market closed to them except on Saturday afternoon, and

then it is only kept open to meet the convenience of those of the trade, who may have some poor meat left to dispose of themselves, or who sub-let their stands to others for the sale of such outside lots of meat as have accumulated in the market during the week.

On Saturdays the gates are allowed to remain open until eight o'clock, on all other weekdays they are closed at two o'clock.

Here, then, will be found an anomalous and scarcely credible feature in our metropolitan system of meat distribution, the effects of which are barely realizable by ordinary observers, but the fact remains that the largest city in the world has but one meat market, for the supply of its four millions of people, and that market is so conducted that neither producers nor consumers can approach each other within its precincts.

There are other peculiar things in connection with this food market in addition to the particular features referred to, inasmuch as the Poultry and Provision Market has been handed over to dealers in Continental and American margarines and other imitation butters and cheeses, to the exclusion of the produce of our home farms and dairies. American and Dutch pork, bacon, hams, and other hog products, are

freely and lavishly displayed on all sides, while the prime quality commodities of Ireland, Yorkshire, Wiltshire, and other districts are excluded or subjected to the unfair competition of an inferior, and in many cases a fraudulently adulterated article. It cannot be surprising that we suffer from agricultural distress, and the inevitable results attending a trade depression; and the question naturally arises, On whom does the responsibility lie?

The remedy for this state of affairs is clear; utilize the market solely for the purpose for which it was intended, viz. the sale of produce by the owners or their appointed agents; stop all dealing in meat by second or third parties; let meat, once sold, be sent out of the market, not to come in again; let those who wish to deal in meat, freely do so outside the market like all other butchers; let the market remain open at all hours, that the public convenience and wants can be provided for as they wish; let farmers or their agents have direct access to buyers and be allowed to hang their meats upon any unoccupied hooks that there may be in any stall in the market upon payment of the prescribed toll.

This principle is recognized at the Billingsgate Fish Market, where the clerk of the


market can give possession of a stand to a new comer for the sale of any fish he may have after the owner of the stand has sold his own consignments of fish. If this rule is found to be applicable, necessary, and useful at Billingsgate for fish, why should it not be equally so at Smithfield for meat and dairy produce ?

This course of procedure will naturally be objected to by the "Trade," viz., the "Salesmen" and "Bummarees," whose interest it is to maintain the present condition of things as they are ; but the interest of the public, both as producers and consumers, is entitled to a large consideration on the part of the corporation. If its members are wise in these generations, they will give prompt attention to the subject voluntarily, and not await the inevitable expression of opinion that the public is certain to make.

CHAPTER VI.

Anomaly Four.

THE IRISH CATTLE TRADE—ITS CHARACTER.

HE exceedingly large part that Ireland plays in furnishing the requisite food supplies for the people of England, and the small amount of information that is generally possessed with regard to it, exhibit extraordinary traits in the characters of all classes of people in the two countries; and if the leaders of public opinion on both sides of the Channel had taken steps to acquaint the producers in Ireland, or the consumers in England, of the powerful tie by which their mutual interests were inseparably bound together, one of the causes that has been at the bottom of much if not of all the agitation that has been fostered with the Irish people would have been removed, and the people of England would have derived some experience of what is—to them generally—incomprehensible, “the Irish question.”

The complete information as to the large

extent by which both peoples contribute so much to each other's maintenance, and the experience, if made generally public, would have resulted in the position being more accurately under observation, and the real cause of the difficulties, which in reality are low prices arising from want of better communication, would then be brought to light, and effectively dealt with.

If the generally accepted statements have any foundation, they would soon prove so repulsive to English feeling and thought that they would speedily excite a thrill of horror from all classes throughout the country. The key-note of the Irish position is that Ireland is a food-producing country, and that prices have been so ruinously low as not to allow those engaged in agricultural pursuits to earn a living by their labour and enterprise.

The position thus opened up exhibits an incorrect view of the actual situation, it in fact assumes that England, having been virtually Ireland's sole customer, has purchased her produce at prices that would not allow of Irish people living; in other words, that the English working classes have been living at the cost and expense of their Irish fellow-countrymen.

Such an opinion, if once definitely and clearly

made public, would take root in the minds of the people, who, knowing its falsity, would not rest until the matter were traced to its foundation.

Beyond all doubt the deplorable condition of Ireland and the discontent of the Irish people arise from one primary cause only, and that is the low prices the farmers receive for their produce. Remove that difficulty, then plenty and peace will predominate, and all the remaining causes of discontent will regulate themselves in the ordinary course of events.

Looked at from the broad commercial standpoint, it is evident at a glance that a radical error exists somewhere in her commercial system, for Ireland stands out prominently as an exceedingly high-class food-producing country, in close proximity to thirty millions of hungry consumers, who readily purchase all she has to sell at exceedingly high prices. One tithe of the labour and attention that have been expended in creating bad blood between the different classes in the countries on both sides of the Channel, if devoted to a practical examination and a remedy for the causes that prevent the high prices paid by English consumers for Irish produce reaching Irish producers, would have made them prosperous,


and effectually have removed the causes of depression from which they have unnecessarily suffered, and which have brought about so great an amount of class antagonism in both countries.

The first things necessary to do in connection with the subject, is to publish information concerning it, more especially the quantity of the weekly exports of produce from Ireland to England, the extent of which are quite unknown, their values in Ireland, and the means by which they may be transmitted to this market at the least possible cost and charge.

With this information in front of them, Irish producers and English consumers would speedily acquire a deep interest in the subject, and insist upon its being placed upon a proper basis.

CHAPTER VII.

THE IRISH CATTLE TRADE—ITS EXTENT.

INCE 1825, when the collection of duties on Irish produce ceased, accounts of the exports from Ireland to our markets have not been prepared and published. This is to be regretted, inasmuch as they would tend to instruct people on both sides of the Channel how useful they were to each other, and lead to the diffusion of other information.

So far as meat is concerned, the agricultural returns deal with the exports of live animals, and these enable a calculation to be made of the value of the meat supplies that Ireland contributes to the British commissariat, which is not generally known, or their comparative extent with foreign supplies understood.

But we have unmistakable evidence that we receive more meat fresh from Ireland than from all other sources of live, dead, or preserved meat, both colonial and foreign, put together, as will be seen by the annual re-

turns issued by the Privy Council, which show that the imports of animals for the five years 1881 to 1885, were as under:—

IMPORTS FROM IRELAND.

Years.	Fat cattle.	Store cattle for fattening or breeding.	Other cattle.	Calves.
1881 . .	279,125	250,899	3,701	37,832
1882 . .	291,777	427,798	3,006	59,693
1883 . .	229,603	278,518	1,819	46,927
1884 . .	255,026	387,352	2,220	71,245
1885 . .	243,348	342,938	1,884	52,300
	1,298,879	1,687,505	12,630	267,997

Years.	Total cattle.	Total sheep and lambs.	Total pigs.
1881	571,557	577,627	382,995
1882	782,274	558,404	502,906
1883	556,867	460,726	461,017
1884	713,843	533,285	456,678
1885	740,470	639,090	398,564
	3,267,011	2,759,132	2,202,160

Total number of animals 8,228,303

The total colonial and foreign imports of animals during the same period were—

Cattle	1,936,246
Sheep	4,870,735
Pigs	121,897

Total number of animals . . . 6,928,878

Showing that in the five years from 1881 to 1885, Ireland sent to us 1,330,765 more beasts than all foreign countries and British Colonies together, while the number of sheep and pigs were about equal.

Notwithstanding these enormous imports from Ireland, which the foreign shipments tend to show reached an inadequately supplied, though it ought to be a profitable market, Irish farmers and graziers have, to all outward appearance, been carrying on a continuously losing business.

The outcome of this remarkable anomaly, is exhibited in the curious fact that while Irish agriculturists appear to have reached the lowest stage of unprofitable production, English consumers have become imbued with the idea that we are dependent upon foreign sources for our supplies of food; therefore it will be interesting for both to glance at the actual existing position, from which it will be seen that there must be something terribly wrong on the one side, and a gross illusion on the other.

The fact as thus represented, appears somewhat incredible; but it remains indisputable that notwithstanding the disorganized condition into which affairs have drifted in that unhappy country, Ireland alone sends us more meat than

all other parts of the world together. The detailed official returns relating to the importation of live stock and fresh meat during 1886 and 1887 from Ireland, British possessions, and Foreign countries, are as follows :—

LIVE STOCK.

Ireland.			Foreign and Colonial.		
—	1886.	1887.	—	1886.	1887.
Fat cattle . . .	285,156	331,119	Cattle, including stores and calves .	319,538	298,888
Store cattle . . .	388,917	302,878			
Other cattle . . .	1,247	2,283			
Calves . . .	42,069	32,973			
Total . . .	717,389	669,253			
Sheep . . .	493,983	321,644	Sheep, including lambs . . .	1,035,548	978,834
Lambs . . .	240,230	226,924			
Total . . .	734,213	548,568			
Fat swine . . .	391,509	438,155	Swine . . .	21,394	21,976
Store swine . . .	29,776	42,765			
Total . . .	421,285	480,920			
Total animals from Ireland . . .	1,872,887	1,698,741	Total animals from Foreign Countries & British Colonies	1,376,480	1,299,698

Showing that in 1886 there was an excess of 496,407 animals from Ireland, 397,851 of which were cattle ; while the sheep and pigs together furnished an increase of 98,556 animals. Averaging the yield of meat from the cattle at 6 cwt. each, and that from the pigs at 1 cwt. each, the gross amount of meat from these animals exceeds 124,000 tons ; while in 1887 there were 370,365 beasts and 28,678 sheep

and swine more imported from Ireland than from all foreign and colonial ports together. Thus in that year the additional meat yield of the live animals was 112,543 tons, but deducting the total quantity of fresh meat received from all foreign and colonial ports, which was 81,716 tons, it shows, taking all kinds and characters of fresh meat, that the large quantity of 30,827 more tons of meat were received by the British workman from the Irish farmer than from all foreign and colonial sources put together. The range of years over which the accounts have been taken, and the details exhibited, clearly show that the trade is a regular and continuous one, and not of a spasmodic character, also that it reaches the sum of about twelve million pounds sterling per annum.

	Animals.	Cwts.
Excess in cattle . . .	397,851 at 6 cwt. each	2,387,106
Do. in sheep and pigs	98,556 at 1 „	98,556
	<u>496,407</u>	<u>2,485,662</u>

Tons 124,283

An amount that will be received with surprise and astonishment by all classes of English consumers against this—

The Foreign and Colonial Imports of Fresh Meat in 1886 and 1887 were:—

—		1886.		1887.	
		cwts.	tons	cwts.	tons.
Fresh beef . . .	United States . . .	762,147		643,320	
" . . .	Other countries . . .	44,634		12,874	
	Total	806,781	40,339	656,194	32,809
Fresh mutton . . .	Holland . . .	52,063		64,375	
" . . .	Argentine Republic . . .	...		251,273	
" . . .	Australasia . . .	383,317		438,083	
" . . .	Other countries . . .	216,909		29,383	
	Total	652,289	32,614	783,114	39,155
Fresh pork . . .	Holland . . .	53,498		118,228	
" . . .	Belgium . . .	25,103		29,746	
" . . .	Other countries . . .	2,952		3,390	
	Total	80,653	4,033	151,364	7,568
Meat unenumerated .	—	42,312	2,116	43,680	2,184
Total		1,582,035	79,102	1,634,352	81,716

1886.

Estimated excess weight of meat by cattle from Ireland	Tons.
Less weight of fresh meat received from foreign countries and British Colonies	124,283
Net excess from Ireland	79,102
	<u>45,181</u>

1887.

Estimated excess weight of meat by cattle from Ireland	112,543
Less weight of fresh meat received from foreign countries and British Colonies	81,716
Net excess from Ireland	<u>30,827</u>

Showing that during 1886 the importations of fresh meat from the European Continent, America, Canada, New Zealand, Australia, South America, the Falkland Islands and other countries were:—

	Tons.
Fresh beef	40,339
„ mutton	32,614
„ pork	4,033
Sundry undescribed	2,116
<hr/>	
Making a gross total of	79,102

Which quantity, deducted from the 124,283 tons excess from the live animals, show that the *Irish producers supplied the English consumers with at least 45,181 tons of meat more than all foreign countries and British Colonies together*, and that the value of the surplus quantity at 6*d.* per pound exceeded two and a half million pounds sterling.

The British Customs returns do not, like those of the Irish Agricultural department, furnish separate particulars of the fat and store cattle and sheep and lambs received from abroad. An estimate of the meat yield can, therefore, only be arrived at in a general way, but for the following reasons Ireland may be entitled to credit for supplying us with more meat than is even included above.

Accounts for several years show that the number of calves from Ireland and the Continent are about equal; therefore they do not affect the result. The 6 cwt. carcase weight estimate that has been taken would in itself be excessive on the 388,917 store beasts from

Ireland, but there is no account of the number of store beasts received from the Continent, which by setting against it would reduce that number; while in considering the excess estimate there must be taken into account the fact that the Irish sheep and lambs are so much heavier than those from the Continent, that the 734,213 of the former would yield as much meat as the 1,035,548 of the latter, while the 391,509 fat pigs furnish a very much larger weight of meat than the hundredweight basis taken. In addition to these items the edible offal from the 397,581 surplus beasts has to be taken into account; it includes the head, tongue, tail, heart, liver, legs, tripe, fat, &c., averaging about two hundredweight of animal food from each beast.

Irrespective of the above, the total would be further affected by the amount of the fresh meat from Ireland, which has not been taken into account, owing to the fact referred to of the returns of the exports from Ireland not being published; but that the quantity is entitled to much consideration may be gathered from the evidence of Sir Ralph Cusack, the chairman of the Midland Great Western Railway of Ireland before the Select Committee on Irish Industries, on "9th July, 1885, reply to question 9305." He stated:—"The Midland Great

Western Railway Company erected one abattoir at Dromod, and last season we killed about 20,000 pigs, which we sent forward as pork pigs, principally for the London and Manchester markets."

The remarkable position that Ireland is thus seen to occupy as suppliers of meat to the people, in comparison with the quantities from abroad, has been received with astonishment and incredulity on all sides, more especially by those who are largely identified with Irish affairs. That the results to the Irish farmers has not been commensurate with their expenditure of labour and capital, is evidenced by the general expressions of dissatisfaction that are made there by all classes connected with Irish agricultural industry.

CHAPTER VIII.

THE IRISH CATTLE TRADE—ITS FOLLIES.

THE miserable results yielded by the Irish cattle trade with England, which is estimated at over twelve millions sterling annually, are entirely due to the reckless and wanton manner in which it is conducted, and the enormous and unnecessary waste of meat that takes place in connection with it.

That this may be understood, it is well to explain that "in Ireland cattle are sent from the farms to one or more local fairs, where they are collected in droves, and forwarded to the seaport markets for resale and shipment. The rough usage, exposure, hunger, thirst, and other cruelties to which the animals are subjected during their transport by rail and sea, so continuously terrify and completely exhaust them, that it is impossible accurately to describe the miserable condition in which they emerge from the English market to enter the slaughter-house. It is well known that every hour a fat animal is away from

its farm is an hour of pain, torment, and waste, but in the absence of any system of weighing in the Irish trade, it is not possible to arrive at the actual aggregate loss of meat to the country by the waste in the animals, owing to the constitutional disturbances to which they are liable by reason of the treatment referred to.

An estimate, however, may be made from the experience gained in the conduct of other trades, and it has been ascertained that a bullock will lose 5 per cent. in weight in the single railway journey between Aberdeen and London, while in America animals will shrink from 100 lbs. to 150 lbs. in weight in the single journey from Chicago to New York.

Assuming that Irish cattle lose no more in the longer journey they undergo, than animals from Aberdeen, and that their live weight averages 1400 lbs. per beast, the loss from shrinkage amounts to 70 lbs. of meat per animal, irrespective of the depreciated condition of the meat from bruising in transit, and its feverish condition on arrival.

The net value of the meat without bone thus lost in 1886, at the nominal price of 7*d.* per lb., is 2*l.* 0*s.* 10*d.* per beast, or a gross total of 1,597,142*l.* sterling for the year, representing a gross weight amounting to 24,446 tons of beef.

If to this is added the loss in the weight and value that has been similarly made in the sheep and pigs, it may be estimated in round figures at 30,000 tons of meat, valued at 1,900,000*l.* sterling. Truly England would have welcomed the meat, and Ireland the money thus needlessly wasted during a single year in one article of produce.

A characteristic feature existing in connection with the Irish cattle trade, that it would be difficult to match in any other business in the world, may be noted as the most intensely Irish bull that any people as a nation ever perpetrated, according to the published reports of their exports of live animals: the numbers given for the five years, 1,298,879 were fat beasts, and were shipped principally to Liverpool and Bristol for slaughter; and 1,687,505 were store cattle, about two-thirds of which were shipped to Scotland, and about one-third to Norfolk and other English counties.

Owing to their seriously depreciated condition, the so-called fat cattle do not realize at the English markets within a penny per pound of other live beasts that are offered for sale at the same time.

While the store cattle, after three or four months' feeding in the north and south, are

sent to the London and provincial markets as prime Scotch and English meat respectively, and make top prices, or about one halfpenny per pound more than any other meat that may be offered."

Thus Irish cattle, when sold on their merits, make a penny per pound less than other animals—but prepared and converted into English and Scotch meat, they make one halfpenny more.

But an insight into the inner life of the Irish grazing industry, demonstrates the actual cause which has given rise to the deplorable condition into which it has drifted. A great cry has been raised there about landlords and rent, but not a word has been publicly mentioned about the "Salesmasters," the infamous usurious class of middlemen whose hold on the people and the live stock of the country, has resulted in the creation of the vested interests that perpetuate a pernicious system of distribution. This in its turn is the cause of the wanton destruction of the quantity and quality of expensively raised meat, to the extent of millions sterling yearly, which if saved, would make the truly national interest of Irish cattle breeding and feeding, a most prosperous and rapidly extending one.

The redemption of Ireland's great industry lies in the suppression of this ogre-like class,

and the replacing of them by the completion in Ireland of the scientific and practical arrangements in the conduct of its cattle trade, that enable the Americans even in the far West successfully and profitably, to enter English markets with their meat in competition with them. Transpose the live cattle trade of Ireland into a dead-meat trade, and the moral beneficial results would immediately follow. The supplies of meat would increase in quantity, improve in quality, and extend in value, while the cost of its distribution would be materially lessened; local industries of a varied character must inevitably spring into existence in connection with it, furnishing much advantageous employment to the people, and the home supply of foods will so materially increase in quantity, that we should discover the means by which we may become nearly, if not quite, independent of foreign sources for any of our food supplies.

CHAPTER IX.

Anomaly Five.

LIVE STOCK PREPARATION.

WITHOUT pretending claims to agricultural knowledge or experience, it is quite possible for the commercial observer to discern anomalies of a glaring character, in the courses of procedure connected with the preparation of the annual meat crop of the nation.

This, beyond question, is before all others the most important of our great national industries, reaching an estimated wholesale value of 70,000,000*l.* sterling per annum, exclusive of the offal ; but, by including the offal and the wholesale carcase price of the meats to butchers, the value will be little if anything short of 90,000,000*l.*, a figure the extent of which is beyond the capacity of ordinary minds to grasp.

In the preparation of their meat crops, home farmers treat their beasts in their characteristic haphazard way ; little or no thought appears to

be given to the important considerations as to how an animal shall yield the greatest amount of meat of the best quality, in the shortest time, and at the least expense.

These are all important features, that are largely taken into calculation by the American and Canadian farmers, and they derive proportionate benefits from their concentrated attention, the results of their efforts being discernible in the movements that have been made public from time to time. New food preparations and systematic feeding are found to have maintained animals in better and more regular condition than hitherto. "Feeding for fat or lean" and "marbled meat" has reduced the practice of meat culture to a science of a precise nature, and brought about a better realizable value for live stock, owing to the production of animals with carcasses of a known value to the requirements of butchers.

Watching and weighing the daily progress of animals, and continuously noting the results of a given quantity of particular foods, have brought out much valuable knowledge incidental to "early maturity," and taught breeders and feeders, that animals thrive well and make comparatively better profits up to a certain point, beyond which their increase of meat upon a

given amount of food commences to diminish, until ultimately they begin to be unprofitable to keep.

To cultivate the regular and systematic accumulation of flesh by live stock, is a widely studied art successfully practised both in America and in Europe, more especially in Hungary, Bohemia, Austria, and parts of Germany. The retention of their perfectly acquired weight and condition by animals of all classes is also recognized as a subject of marked importance.

The housing of stock in properly constructed barns or other buildings, has been proved to be an absolute necessity, to prevent their losing weight and the maintenance of their healthy condition; but how few of any of these highly desirable matters are even thought of, not to say practised by our farmers as a whole.

True, here and there will be found among them intelligent minds, who give attention to such matters, and in the result derive proportionate benefits from their skill, intelligence, and industry; but generally the farmers of the country rely upon the knowledge they have gathered within the area of their own fences, and implicitly believe that they have acquired a world-wide experience, when they have never

had as much as a set of scales on their farm, by which they could make a series of consecutive tests for their own guidance, and upon which they could base an opinion with any regard to accuracy.

With them it is, "There is something the matter with that cow," or "This bullock does not get on well." But why or wherefore the animals fail to thrive, or what is the cause of their indisposition, they do not know, and make no effort to find out.

Farmers lose sight of a great factor in their business, when they omit to bear in mind that the same regard must be paid to the health of animals, if they are to be maintained in healthy condition, as to that of human beings.

If it is required to put an abundance of meat on the bones of an animal, and keep it there, not only some, but a large amount of consideration must be given to the hygienic conditions under which it is bred, fed, and reared.

This is not done at present, and on all sides abundance of evidence may be gathered showing, the enormous extent of the want of consideration and neglect with which our cattle industry is allowed to carry itself on, for it cannot be said to be generally carried on by farmers.

That the loss arising from this misconduct (for it cannot be designated by any other term) is something enormous may be gathered by the large amount of poor and bad meat sold throughout the country. The extent this reaches may be estimated by noting the numerous prosecutions against those who are discovered, notwithstanding all the care that they exercise; these cases are being continuously brought before the police-courts in all parts of the kingdom.

Some idea may be gathered of the condition of the animals throughout the country, and of the proportion of diseased meat that is consumed by the public, by noting the results of the examination of the carcasses of the animals slaughtered by the Jewish authorities, who reject as unfit for food an average of 35 per cent. of oxen, 25 per cent. of calves, and 25 per cent. of sheep. This proportion, it must be understood, is from animals that are apparently in good condition, or they would not be taken over by the Jewish butchers for slaughter at all. Further evidence in corroboration of this serious condition of things will be found in the quoted market prices, viz. inferior beef, 2s. the stone of 8 lbs., or 3d. per lb.; middling beef, 3s. the stone, or 4½d. per lb.; prime and choice beef, 4s. per stone, or 6d. per lb. Those for mutton

bearing the same relative proportions. These are not exceptional prices, but the current quotations of the Metropolitan and the principal provincial markets, and have been so from time immemorial.

It is important to know why there should be such a sufficiency of inferior and middling meat as to warrant these varying prices. Are they the result of natural or unnatural causes? The British farmers will, as a body, assert that the effects arise from causes beyond their control, and are natural.

This, however, is not the case, the generality of the diseases existing in our live stock are in a great measure preventible or remediable; and therefore the causes are unnatural, and due or owing to the ignorance, indifference, and neglect of our farmers, who not only thereby suffer large losses themselves, but are the cause of the people being deprived of a considerable supply of meat that they otherwise would have for consumption.

The cause of this evil state of affairs is the utter want of care and consideration for the animals; the non-provision of suitable barns and proper food; and ineffective attention when the animals are attacked with sickness, the major portion of the diseases from which the animals

are found to suffer being those of the lungs. These conditions show that they have their origin in sudden climatic changes against which they have no protection. Let a human being be so attacked, and saying it is only a cold he suffers from, leave it unattended to. The natural result will be fever, accompanied by a rapid loss of flesh, when there must be careful attention or death ensues.

The course with an animal is exactly the same as with a human being, forced subjection to climatic changes brings on a cold, which being unattended to, develops itself and reaches the lungs, where the inflammation continues to increase, and ultimately pervades the carcass, the animal loses weight rapidly, and is invariably slaughtered to be saved, when the meat is found to be seriously depreciated and unhealthy.

The evidence that this condition of things is preventible may be gathered from several sources, notably from Hungary, where the system of stall-feeding cattle is reduced to a science. Not in one establishment, but in the large numbers that are to be found in most parts of that country, from three thousand to four thousand head of cattle will be found at all times, in many of these "feederies" undergoing a process of conversion from grass-fed "stores"

to prime-fed beasts of the highest character ; numbers of animals are continually being drafted out and their places taken by new comers ; while but little or no sickness is to be found among them. If anything should be amiss with a beast, it is at once removed to a separate place, and attended to until it has quite recovered, when it will be sent back to its stall and continue the course of feeding.

So thorough and systematic is this principle of feeding carried out, that it is generally known, when a beast enters the establishment and is weighed, what it will weigh at the end of three months' treatment and when it will be ready for market. The animals thus dealt with not only acquire a perfect condition, but also become of such a uniform character that they are quoted and sold in the Vienna and Pesth markets by the brand and name of the establishment and feeder ; large numbers of these command the highest prices then current for their animals. If this condition of things can be brought about, as it has been so generally throughout Hungary, that is good evidence that it can be done in England and Ireland ; but Hungary is not alone in this system of factory feeding. Bohemia conducts its operations on similar lines, and largely supplies the Berlin

market with the best cattle that reach it. In other parts of the Austrian Empire similar systems of systematic cattle-feeding are successfully carried out. But the evidence that cattle can be fed to have a uniform value of a high character can also be found in Scotland; and it is not possible to find in any market a marked difference in the quotations for Scotch cattle or meat, as both invariably command the highest price when offered for sale.

In America, where those engaged in agricultural pursuits pay great attention to the means that can be effectively utilized for the purpose of acquiring the most profitable results, "barn" or stall feeding in suitable places close to the ranches is rapidly becoming an established branch of the cattle industry, owing to the advantages that have been found to accrue from the "finishing" of animals where they have been bred, and marketing them as "fat beeves."

In these circumstances will be found material for profound thought for the English and Irish farmers and those who guide them, who may readily discover that the housing of live stock in well constructed, properly ventilated, and effectively drained barns or sheds, so as to protect them from the inclemency of the weather, will do much to maintain them in a healthy and good

condition, and the enormous loss that is at present sustained in all parts of the kingdom from this cause alone, will be avoided.

The acquisition of a uniform practice in housing and feeding, by which highest qualities and quantities can be ensured to live stock, means the prompt addition of many millions sterling to the pockets of our farmers, as also an abundance of prime home-grown meat at a low price for the people.

This desirable end can be attained promptly and successfully by our farmers combining to slaughter at central abattoirs, each in its own county. The provision of this accommodation would bring into existence a system of stall or barn feeding in connection with and proximity to the abattoirs, when it would be found that early maturity, together with stall-feeding, coupled with systematic realization and distribution, would bring prosperity to farmers and all classes identified with the agricultural interest, owing to the great increase in the payments for live stock that would be made consequent upon the employment of the means indicated.

CHAPTER X.

Anomaly Six.

THE FARMER'S WASTE IN OFFAL.

THE conduct of farmers in the disposal of the so-called offal, or the fifth quarter of their animals, exhibits in a marked degree the characteristic want of thoughtful consideration with which they transact their business. It is evident that neither the practical farmer who cultivates the soil, nor the theoretical agriculturists who profess to teach them the proper course to adopt, have given the slightest attention to the subject of the commercial realization of offal, with the view of ascertaining the commodities of which it consists, their uses and commercial value, how they may best be dealt with, and the highest amounts they should realize. Had they made these inquiries, they would have speedily arrived at the conclusion that it is quite possible for farmers to deal with and dispose of their live stock so

as to give an increased value of 2*l.* 10*s.* to 3*l.* for the so-called offal alone of each beast that they now breed and feed, and thereby advance the value of each of their animals by that sum per head, equalling a total of five to six million pounds sterling upon the total number of animals annually marketed, a sum that the farmers might receive, of which they now deliberately and unnecessarily denude themselves, which grave amount being a direct addition to their profits, would contribute largely to diminish the existing distress in agricultural districts.

But the anomalous condition of things, to be found in connection with this particular subject, does not terminate with the loss of money only by the farmer, for by the proceedings they adopt the country loses a considerable amount of valuable food material that the people require, and can ill afford to spare, which they are now compelled to replace by purchases of an equal quantity from the farmers of other nations.

It cannot be too strongly borne in mind that all the edible parts of an animal, if *properly prepared*, are equally palatable, savoury, and nutritious, possessing considerable food value, and as a consequence have a commercial

value proportionate to the extent in which these items are directly utilized. Therefore the term "offal" is decidedly inaccurate, being a misnomer which has been brought into existence by the cattle-dealers, who have successfully accomplished the task of imbuing farmers with the idea, that the items to which it refers are of a comparatively valueless character, an impression which is forcibly strengthened whenever farmers attempt to slaughter any of their own live stock, and are encumbered by having small quantities of the different articles on hand, which they try to dispose of, but owing to their insufficient quantity, are not capable of being adequately dealt with.

The nature of this subject will be best understood from a description, in the first place, of what offal consists, in the second, with an account of what is done with it at present, and in the third, what might be done if the owner of the cattle so desired.

Offal in cattle consists of all portions of the animal other than the actual two sides of beef, and comprises the following items of the approximate weights and wholesale value respectively, from an animal whose live weight would be 1400 lbs.

				Weight.	Wholesale Value.		
					£	s.	d.
Hide	..	..	76 lbs. at 4d.	..	1	5	4
Fat	..	..	90 „ at 2d.	..	15	0	
Tongue	..	..	6 „	..	3	6	
Tail	..	..	3 „	..	1	0	
Kidney and fat	.		10 „	..	5	0	
Head	..	..	30 „	..	3	0	
Heart	..	..	9 „	..	1	2	
Liver and lights			30 „	..	1	6	
Tripe	..	..	120 „	..	2	6	
Legs	..	..	20 „	..	1	0	
Blood	..	..	40 „	..	1	0	
				434 lbs.	£3	0	0

There are also horns, hoofs, &c., which are omitted, owing to their comparatively small value.

Deducting the hides and blood, weighing 116 lbs., valued at 1*l.* 6*s.* 4*d.*, which are used for manufacturing purposes, the remaining parts consist of 318 lbs. of edible food products, which include the tongue, tail, kidneys, and heart, weighing 28 lbs., valued at 10*s.* 9*d.*; there remains 290 lbs. of edible food, valued at 1*l.* 3*s.*, which includes 90 lbs. of fat, which in other countries is made into margarine for shipments to our markets and sale to the British public at from 8*d.* per pound upwards. And as a matter of fact, a large quantity of fat is exported to Holland at 2*d.* per lb. for conversion into margarine, in which form it is re-imported at 8*d.* per pound.

But assuming the home value of the fat from the animal for manufacturing purposes at only 2*d.* per pound, there then remains a residue of edible foods, weighing 200 lbs. gross, which, at the value of 3*d.* for all the offal, stands at the proportionate cost of 8*s.* only.

In the ordinary course of trade resulting in sale of the beast by the farmer to the dealer, the custom is "to sink the offal;" that is to say, that the price of the animal being agreed upon, the weight of meat is estimated partly by guess measurement, and calculation what the actual net weight of the two sides is likely to be after the animal is slaughtered, and it is upon the basis of that estimate that the payment is made.

No value is placed on the so-called offal, that being given in upon the assumption that it is supposed to repay the butcher for the cost and charges incidental to slaughtering, dressing, &c., but in the ordinary course of trade with prime beasts, especially in a bare market, the amounts the dealer will realize by the sale of the offal enters into the consideration, and is clearly visible in the higher price at which the live animals are sold in the Islington Market, over that of the current quotation for dead meat in the Central Meat Market,

which for choice animals ranges from 4*d.* to 6*d.* per stone of 8 lbs., showing that the dealers have allowed the farmers from 33*s.* to 50*s.* per head for the offal, but the dealer after the slaughter of the beast sells the offal to various parties. Thus the hide, horn, and hoofs will be sold to the hide-factor; the kidneys are weighed with the meat; the tongue, heart, and tail go to the market; soap-makers collect the fat; tripe-men take the liver, lights, tripe and fat, brawn and sausage-makers the head, and manure-makers the blood.

The prices realized vary with the market values of hides and tallow, also with the other items in summer, but the amount paid for them is so small, that even a large variation makes but little difference in the total received for all the items, which for some time past has been about 50*s.* to 55*s.* per head, for fair-weighted beasts; therefore, so far as the offal is concerned, the relative position of the farmers and the dealer is, that on prime beasts the dealer will on rare occasions have to sell the offal at cost, but at other times, and at all times with second and lower-class animals, the dealer makes about 20*s.* per beast out of the offal.

From the prices noted for each of the

items—which are to a great extent sold by contract—it will be seen that those portions utilized for manufacturing purposes, viz. the hide, fat, and blood, realize current market values; but why farmers should allow the fat of their beasts to be sold at 2*d.* per pound, to make soap and candles, while we import over 100,000 tons of margarine, to the value of four to five millions sterling annually, at from 8*d.* to 10*d.* per pound, is not the smallest of the anomalies in connection with our farmers' system of realizing their produce.

The tongue, tail, and kidney realize fair prices, to allow retail butchers to obtain a reasonable profit; but the remainder of the items—heart, head, legs, lights, and tripe, weighing about 200 lbs.—realize 8*s.*, being about one halfpenny per pound, or, in round figures, two pounds' weight for one penny.

The chief cause of this ridiculous, and ruinous result is the divided system of slaughter in connection with our own system of meat distribution. In London there are a considerable number of private slaughter-houses in different parts of the town; there are also a number of isolated slaughter-houses at the Islington and Deptford abattoirs. But even in these each dealer handles his own few animals,

looks upon the offal as a nuisance, lets each item of the proceeds of the day's slaughter accumulate in their filthy condition until they are collected by the various contractors, by which time a large portion of the edible offal has become stale, and sickening even to the sight, the trades engaged in their manipulation have become noxious to the health of the people, and are subjected to special legislation.

While the system of isolated slaughter continues to exist, this ruinous condition cannot be altered; but the interest of farmers to see that it is altered, and that speedily, will be found in the fact that the same 200 lbs. of food material properly and effectively dealt with while fresh from the animal, is capable of conversion, at a nominal cost, into 150 lbs. of what are designated in the trade "small goods" and "made goods," such as brawns, collared head, soups, sausages, boiled, pickled, and seasoned tripe, dripping, and numerous other well-known dishes of a most savoury and palatable nature, similar in character to those that are invariably to be found on the menus of the leading hotels, cafés, and restaurants in all directions on the Continent, from the German Ocean to the Black Sea, and from the Baltic to the Mediterranean.

Such articles are also now made at home, and sell at from 4*d.* to 8*d.* per pound ; but the value of the material is depreciated from the disgraceful manner in which it is treated ; and the goods made from them are materially reduced in value, owing to the want of confidence the public have in the methods of preparation adopted by those engaged in the trade. Under proper control and supervision, the 200 lbs. of offal material is capable of producing 150 lbs. of prepared foods of various descriptions, the average wholesale realizable value of which, even at the present selling rate of 4*d.* per pound, makes 4*l.* 3*s.* 4*d.* per beast, instead of the 8*s.* at present realized.

This result should be sought for, and is readily obtainable, by farmers combining to slaughter their beasts in the counties where they are reared ; and by the general adoption of these means, not only will the farmers obtain six or seven millions more money annually, in the form of additional profits, but the people will receive a large amount of valuable healthy food, prepared under a supervision and control in which they will have confidence, and enjoy.


An advantage of a similar nature considerable in extent would accrue to the sheep farmer by the concentration of the slaughter of his

stock in the local abattoirs, where, in addition to the edible offal, an increased sum would be receivable for the wool, which, accumulating in bulk, could thus be more readily cleaned and disposed of, by which means there would be not only a great increase in quantity, but an improvement in quality, resulting in an enhanced value of the whole; at the same time a considerable reduction in the cost and expenses of delivering would be effected, which would enable a much larger sum to be netted for this valuable item of offal in sheep by the existing system of isolated slaughter. Sheepskins become divided up into small quantities in the hands of butchers, from whom they are collected by dealers, by whom they are transmitted to various skin markets, where they are disposed of to the agents of fellmongers. The carriages, cartages, and labour expended in the transmission of the skins in the grease to and from the various centres of collection and distribution from the butcher to the fellmonger, with the profits and commissions of dealers, agents, and salesmen, will exceed one shilling per skin, being half a million sterling, which would be saved by the wool being washed and scoured close to the abattoirs.

CHAPTER XI.

Anomaly Seven.

THE SALE OF BOILING JOINTS.

HE course pursued in the realization of the boiling joints from the carcasses of home-grown animals, exhibits in a striking degree the characteristic negligence and thoughtlessness, with which we as a nation treat matters of the highest social importance.

Upon examination both producers and consumers, will be found to contribute to the extraordinary condition of things which exists in connection with this special department of our system of meat distribution. This is strikingly evident, by a reference to the facts in connection with the subject, which show that the wholesale price of prime beef for the past two or three years in London has been 4s. per stone, or 6d. per lb. ; calculating that an 800 lb. carcase will furnish about 500 lbs. roasting and best joints, which include the ribs, rump, and loins, that are readily saleable at high rates, ranging from 9d. to 1s. per pound retail, there remain

300 lbs. boiling joints, consisting principally of fore-quarter and belly meat, including briskets, flanks, neck, legs, &c., that are not so readily saleable, except at a marked reduction in price ; taking the fact into consideration, that wherever fore-quarters have been sold by themselves, the wholesale price they have realized, as a whole, inclusive of ribs, has been about 2s. to 2s. 4d. per stone of 8 lbs., or 3d. to 3½d. per pound, that figure may be taken as their average wholesale value in our London markets, whether sold by themselves or included as portions of a carcase.

Bearing in mind that all portions of the carcase when properly prepared, are equally palatable, savoury, and nutritious, it should appear strange to those farmers who give consideration to the matter, and who know the prices that consumers pay for meat in London, to find that the large proportion of three-eighths of their beasts realize only a nominal price. This undoubtedly arises out of the peculiar fact, that the bulk of meat-eaters in London, do not consume boiled joints or made dishes of their own preparation, except partially in winter : hence there is at all times a much larger supply of joints of this kind than the ordinary retail butcher requires for his

family-trade, and the meats being in an over supply, find their way at the very low prices to which the trade has reduced them to outlets for being made up into sausages, saveloys, brawn, potted head, and similar articles; also for sale as cooked meats to the numerous boiled-beef houses, foreign restaurants, and cheap cook-shops that are to be found in all parts of the metropolis, especially in the populous portions of the West end.

In the general sales made of boiling joints, there is not the customary variation of prices according to quality that there is with hind-quarters and roasting joints, which are classed as prime, middling, and inferior, the boiling and chopping meats invariably rule at the lower rates without much variation in price according to quality.

If the boiling joints so disposed were resold to the public at equally low proportionate prices, or if the prime English boiling joints made a relative price to the roastings, in accordance with their value, quality and condition, as compared with similar joints of inferior imported meat, there would be but little to complain of in the matter; but this not being so, and there being but little difference in the commercial value of fore-quarter meat from whatever source

it has emanated, the owners of prime meats suffer when their boiling joints are sold alone.

After making full allowance for the shrinkage in boiling, or the cost of preparation in other forms, the prices that the public are called upon to pay for it is, in many instances, treble its original wholesale cost.

That these inexplicable absurdities should in any way exist is most regrettable, but another serious and still further anomalous feature of the matter is discernible in the fact, that while the meat of our home-grown cattle is thus realized at nominal wholesale rates that are productive of loss to our farmers, we import the boiling joints and coarse meats from the so-called offal of American animals to the extent of nearly one million pounds sterling annually, and pay for them when they are prepared in the form of preserved meats nearly double the price at which our farmers are compelled to sell their meat.

Why should such discreditable practices be allowed to continue for a single day? They are easily and promptly remediable.

The concentration of slaughtering by the farmers in any district with us would, as in America, furnish the supply of boiling joints which would enable steps to be taken by

which they could be prepared in the numerous forms in which they are acceptable to the public and in which they would realize much higher prices than they now do.

Not only would English people partake of English meats so prepared in preference to imported meats, but if they were fully assured of their character and quality, they would readily pay much higher prices for them.

In the conduct of their operations in this direction, the British farmer would realize and enjoy a natural protection, denied to his foreign competitor, inasmuch as his proximity to the centres of consumption would enable him to supply the particular requirements of the public, as and when desired, without subjecting the meats to any preserving process.

While the American preserver must employ machinery to hermetically seal his meats in tins, and pack them in cases at a cost of nearly 2*d.* per pound, the products of home abattoirs could be prepared with little more than the appliances of a well-ordered kitchen, and effectively transmitted in ordinary jelly moulds or brawn tins that would be readily returnable when empty at a nominal cost.

The expense of tins and cases being thus avoided, virtually gives the British farmer an

advantage of 2*d.* per pound in goods so prepared.

The consumption of cooked meats prepared for consumption is virtually illimitable, while the prices paid for them are comparatively large.

The means and cost of preparation are simple and inexpensive, the only things necessary to bring about a marked beneficial change in this direction are supplies and organization.

With them farmers might easily sell their boiling joints at prices to furnish them net 6*d.* per pound, after paying all cost charges and expenses incidental to preparation, distribution, and realization, and yet supply the public at a much less price than they now pay, with a better quality and guaranteed article than they at present purchase.

Assuming the boiling joints of an animal to weigh 300 lbs., and that by this course of procedure they will realize 3*d.* per pound more than they do at present, an increased amount equal to 75*s.* per beast will be received by our farmers, and the gross value so receivable upon cattle alone would make the annual difference on the total estimated animals slaughtered, say on 2,698,461 animals, at 3*l.* 15*s.* each, 10,119,235*l.*; while if the public saved 3*d.* per pound in their purchases, they would

economise to an equal amount, and at the same time be assured of consuming prime English meat. In this direction will be found a ready and reasonable remedy for the alleviation of agricultural distress and the trade depression that attends it.

The realization of meats abroad, is rapidly occupying a position analogous to the manufacture of gas at home, wherein it is being gradually discovered that, by the effective realization of the bye products, profitable results are secured sufficient in extent to provide for the cost of material and labour, leaving the gas obtained from the coal free of cost.

The day cannot be far distant when our farmers will awake to their true position and discover that the practical treatment and realization of the so-called offal, which is now "sunk" together with what are at present considered inferior joints of the carcase, and which are disposed of at a nominal price, will pay all cost and charges of breeding and feeding cattle, and leave the prime meats to the farmer as his profit.

But it is not only our own markets that could be supplied with preserved beef. The markets of the world are open to our farmers for their produce, if properly prepared, and there is no doubt that the high reputation that

English meats have acquired, throughout the world would give them a preference of sale wherever offered.

The extent of foreign markets thus available may be estimated, by noting the total quantity of preserved meat exported from America, and deducting the quantity of American preserved meat imported into England from that total quantity, when the remaining amount exhibits what was despatched from America to the other markets of the world ; the returns for 1887 show as follows :—

Exported from America 43,522,196 lbs.

Imported to England 227,435 cwts. = 25,472,720 „

Shipped from America to other markets 18,049,476 lbs.


Say 8058 tons. The estimation in which English beef is held all over the world, would secure for it a ready sale at remunerative prices wherever it might be sent in this form.

The anomaly in this direction is completed by the fact, that of the 11,121 tons of preserved beef imported into England from America, a very large proportion was purchased by the war departments of our own Government, who could materially aid farmers by purchasing their requirements from home sources of supply instead of the poorest quality of American beef, which is the sort that is “canned.”

CHAPTER XII.

Anomaly Eight.

WASTE OF "BONE MATERIAL."

HE large portion of the national meat production, which consists of bone substances, warrants some consideration being given to their beneficial utilization and disposal; but, owing to the disorganized state into which our system of meat distribution has drifted, little or no attention has been directed to the highly valuable nutritive constituents which bones contain, and to the means by which they could be made available as a marked feature in the food supply of the country.

The national loss arising from this wanton prodigality, may be ascertained from following the details of realization, when the glaring anomaly will be seen from the facts in connection with this peculiar case.

Upon an average, bones form one-fifth of the weight of a carcase; therefore, the total annual yield of meat being 70,000 (seventy thousand)

tons, the weight of the bone portion will be 14,000 (fourteen thousand) tons.

When an animal is slaughtered, all portions of its carcase are equally fresh and wholesome. One-half of all the constituents of the bones consists of valuable nutritive substances ; yet large portions of the bone are in no way utilized as an article of food, but are allowed to become putrid and offensive, when they are used for manufacturing purposes at a greatly decreased value.

The actual manner in which the waste takes place, and those who are responsible for the existence of this grievous condition of things, are readily discernible upon examination, thus :—

At the slaughter-house, the heads of cattle, weighing about 35 lbs. each, are sold to sausage-makers, who trim off the meat, which weighs about 10 lbs. from each head, and sell the bone to the bone-boilers.

The feet, weighing about 28 lbs. the set, are also sold to the bone-boilers.

The carcase goes on to the butcher's, where the bones of the legs and other joints are cut off and thrown into a corner, to remain until the bone-boiler's collector calls for them, either daily or every other day, before which

they usually become stinking and of comparatively little value.

Any one accustomed to visit a butcher's shop must have frequently noticed the tradesman's anxiety to get rid of a piece of bone to his customer; how frequently, before weighing a joint of meat, he will chop it up, ready for cooking and carving, but invariably weighing the pieces of bone, which in nearly every instance has but little value for the customer, while the recognized skill of a butcher's salesman is shown in his ability to cut up a joint in such a form as to exhibit the least quantity of bone to the eye while it actually contains the most.

The result of the whole of this custom, tends to make the actual meat dearer to the consumer, a measure that would be avoided were steps taken to properly utilize the bones referred to while fresh, when by treating them cleanly and extracting their nutritive constituents while fresh and sweet, their realizable value would be fully as much as the lean portions of the carcase of which they formed a part; were this done, the consumer might rest assured that the ordinary equalization of trade, would enable him to participate in the enhanced value thus obtained.

The head, feet, and marrow-bones, &c., of

each beast contain an average of about 60 lbs. weight of bones, from which about 30 lbs. of food may be readily obtained, valued at 5*d.* per pound wholesale, and 7*d.* to 9*d.* retail. At present about 10 lb. of fat, known in the trade as “rough stuff” is obtained and the balance wasted: the “rough stuff,” or tallow, is worth about 2½*d.* per pound; thus, upon this source alone, 12*s.* 6*d.* is readily obtainable for what is now sold at 2*s.* 1*d.*

The analysis of bones shows their chemical composition to be about equal quantities of organic matter and mineral substances, viz.:—

Organic Matter—

Fibrous tissue	..	..	..	32
Fat ..	..	..	..	9
Albumen	..	..	..	1
Water	..	..	..	8
				— 50

Mineral Substances—

Phosphate of lime ..	..	..	38
„ of magnesia ..	..	..	2
Carbonate of lime ..	..	..	8
Various salts	..	..	2
			— 50
			<u>100</u>

The more completely these two matters are separated, the greater is the relative commercial value of each.

By simply boiling the bones in a digester, the

organic and mineral substances are readily separated, and may be easily dealt with.

A digester is a plain and inexpensive iron pot, with a steam-tight lid. It was invented by Papin, in Italy, about three centuries ago. They are largely made for export to the Continent by the hollow-ware manufacturers in the Midland counties, but they are very little used in this country. They are made in various sizes, from one quart upwards, and their price commences at from about half a crown each.

The fibrous tissue and gelatinous substances obtained from bones, are of a delicate flavour and, having considerable nutritive value, are admirably adapted for a soup stock or invalid's food.


The fatty substances furnish a flavoured dripping of an equally nutritive value, but better commercial character than the foreign margarines and other imitation butters that largely enter into consumption.

By concentrated slaughter, a large supply of these valuable invalids' and children's foods, at present wasted, would become available at a very moderate cost, and prove most beneficial in quarters where they are greatly needed.

CHAPTER XIII.

Anomaly Nine.

SHRINKAGE.

O far as meat is concerned, the grower of live stock drives his animals from his farm to one or more local markets or fairs, where they are sold by guess-weight to jobbers or dealers, who transfer them to the markets of London or to one of the large country towns, where they are resold to wholesale or carcase butchers, who slaughter them and place the meat in the hands of the salesmen for disposal to retail butchers or dealers designated "bummarees" in the metropolitan or local markets, from whence the meat bought by the latter parties is frequently forwarded to a retail butcher of a town in close proximity to the district where the animals were bred, fed, and originally started from.

Meanwhile, in every stage the animals have lost weight and condition, and in each channel

through which they have passed a profit has been made and a charge or expense incurred, all of which losses or charges affect the farmers. These are the phases of shrinkage.

In all parts of the kingdom cattle are driven from the farms to one or more local markets or fairs, then transferred to the Metropolitan markets of London or Dublin, and they finally arrive at the destined slaughter-house in a fevered and heated condition, diminished in weight and depreciated in quality.

It is known that a beast travelling quietly on a country road will lose one stone per day. It has also been ascertained that an animal will lose 5 per cent. in weight in the single railway journey from Aberdeen to London.

Taking the 700,000 animals annually exported from Ireland to our markets, and estimating only the 5 per cent. loss sustained by the single railway journey from Aberdeen, we have an absolute shrinkage of over 25,000 tons of available food in the Irish cattle-trade alone, to which must be added the waste that takes place from similar causes in the English and Scotch trades.

The difficulties incidental to the distribution of home-grown produce form the principal if not the sole cause of the much bewailed dis-

tress of which agriculturists have so persistently complained for many years past.

It is a marked and curious trait in the character of the agriculturists of this the leading commercial country of the world, that they do not realize the vast difference in the practical knowledge essential to the profitable production of material, and its subsequent beneficial realization; for it will be found that, notwithstanding all the changes which during the present century, have taken place in the social institutions of the nation, and the concentration of large masses of the population in distinct localities, where they are engaged in manufacturing, mining, and other industrial occupations, who regularly require large supplies of foods, and whose concentration offers facilities for their direct supply by producers. Farmers still adopt and carry out the usages and customs of their predecessors, as practised from time immemorial, and totally ignore the facilities thus brought within their reach, which they might utilize with advantage.

It cannot be too strongly borne in mind that unlike most commodities, the retail price of meat bears no relation to the wholesale price, therefore the loss arising from the sale by guess-weight instead of actual known weight,

the shrinkage of animals in travelling, the depreciation in the quality of the flesh, the loss by the improper treatment of the so-called "offal," the profits that have accrued to each of the parties who have been employed at the different stages *en route*, coupled with the costs and charges incurred in transit, have all to be borne by the producer, and make a direct inroad into the sums realized or realizable by him. The total amount of this affects his profits, and upon examination these in the aggregate would be found to be sufficient to convert the grazing branch of farming, from the most depressed to the most thriving industry of the country. In every branch of agriculture similar courses of procedure take place, leading to results of the same character.

The means by which these, on the whole, great reductions or losses can be avoided are simple in character, inexpensive in cost, economical in working, and inevitable in result; and so far as meat is concerned, would arise from the slaughter of the animals in the districts where they are bred and fed, so that they may be in a natural condition when killed to furnish prime quality meat which may be sent direct to the retailers at centres of consumption, as and when required at fixed prices.

Combination and Refrigeration will enable arrangements to be made for the provision and concentration of live stock for slaughter as required, so that regular supplies of meat may be furnished direct to the chief points of consumption at all times throughout the year. It will also allow of facilities being provided for the utilization, while fresh, of all the edible portions of the animal, incorrectly termed offal, and the better preparation for sale of the coarse boiling joints of the carcase.

By the provision of effective chill-rooms, meat may be stored and retained in good order, and ripened for consumption, and so as to be deliverable how, where and when wanted, direct from the slaughter-house of the farmer, to the retail butcher or large consumer, resulting in enormous savings and having other advantages to the grazing interests.

The system of selling by actual weight is a natural outcome of this practice of slaughter and preparation for sale; it is estimated by good authorities that our farmers lose about 2,500,000*l.* sterling per annum by their adherence to the idiotic system of selling by guess-weight, which is at least one substantial argument for the adoption of the proposed measures.

The better utilization and preparation of the

edible offal, consisting of the head, heart, liver, tripe, tongue, tail, suet, &c., and the proper treatment of the refuse would furnish from 1*l.* 10*s.* to 2*l.* 10*s.* more on each bullock, or an annual aggregate increased yield of 4,500,000*l.* to the farmers' profits from this feature of live stock products alone, and at the same time an addition of 15,000 tons of edible foods to the national larder.

After the graphic manner in which the condition of animals from travelling has been described in the reports of the various Parliamentary and other inquiries that have been held, it is somewhat impossible to understand why many of the active and practical minds that the agricultural body possess, have not taken steps that would forcibly suppress a pernicious system, which at one and the same time deprives the farmers of a large amount of property, and inflicts a national loss on the people, by the wanton destruction of an enormous quantity of available food.

The great advantages that naturally spring out of the system of concentrated slaughter, and the enormous losses that are suffered by the practice of travelling live stock, are conclusively shown in the exhaustive reports of the American Government officials.



“It is evident, however, that the only important practicable improvements in the beef transportation system lies in the direction of shipping the carcass instead of the live animal, and thus at the same time saving the expense of hauling the waste matter in the steer and bringing the meat to the consumers in as good a condition as when the creature is driven from the range.”

“It appears accordingly that the New England consumption of Chicago dressed beef has risen regularly and very steadily from 4740 tons in 1878 to 106,894 tons in 1883; while the consumption of Western beef received on the hoof has fallen from 79,077 tons to 40,200 tons, and that the former kind last year amounted to 72 per cent. of the whole. The most remarkable growth in the cattle trade has been the advancement of the dressed-beef business.

The increased facilities for making dressed beef and increased sales of the articles show conclusively that there is an increasing demand for it. When dressed beef was first introduced it met with considerable opposition, especially on the part of shippers of cattle on foot to the Eastern markets; but experience has shown that the meat reaches the consumer, when slaughtered and dressed and put in refrigerator cars, in a much better condition than if sent on the hoof. Regular trains of dressed beef are now sent to the sea-board and intermediate points laden with dressed beef every day, notwithstanding the considerable advances from time to time in freight charges, and the submission of the shippers to what has appeared to them to be an arbitrary proceeding instigated at the suggestion of those shipping beef on the hoof.

Chicago Beef Trade.—As nearly as can be ascertained, the number of cattle slaughtered here was, during 1885-86, 1,240,286; 1884-85, 1,250,301; 1883-84, 1,080,020; of which about 70 per cent. were required for the dressed-beef trade.

“There is a very important branch of the dressed-meat trade which has been inaugurated within the past twelve

months, and which is rapidly growing. It is the consignment of mixed car-loads of beef, pork and mutton, which are forwarded to the smaller distributing points all over the country, to supply the local trade. Merchants in the leading manufacturing districts of the Eastern and Middle States and also in the lumbering districts of the North-west forward their orders to our markets for small quantities of fresh meats for immediate use, which are forwarded in refrigerator cars. Not only are the leading slaughterers engaged in this business, but smaller houses have commenced operations. It is estimated that outside of the number of hogs slaughtered for packing and city consumption during the winter, at least 50,000 were slaughtered for the dressed-meat trade, of the consignment of which there has been no special record kept. The number of sheep slaughtered for the dressed-meat trade is quite large—possibly one-third of the receipts—but no definite figures can be given.”

The average shrinkage of stock in being transported from Cheyenne to Chicago is about 100 pounds to each 1200 pound animal. Cheyenne is the great centre for the cattle trade of the northern ranges.—*Report on the Internal Commerce of the United States*, 1885.

In striking contrast to the rapid development of the American dressed beef trade, notwithstanding the difficulties it had to encounter from the vested interests existing there, are the recent utterances of some of the dealers engaged in the Irish cattle trade who, while strongly proclaiming the horrors attending it, desire to adopt a course that practically sanctions the existence of “shrinkage.” Important meetings of dealers have been held at Glasgow, Liverpool, and other towns in the north, which

resulted in a deputation waiting upon the Lord Lieutenant of Ireland. The annexed remarks made at the Glasgow meeting held on Tuesday, January 19th, 1889, exhibit the experiences of well-known members of the trade.

Mr. John Murray, the chairman, said :—

“ They all knew the animals were stowed in pens loosely, so that when the steamer pitched about, as steamers would do occasionally, one or more animals frequently got thrown down, and were trampled upon by their comrades. Speaking as a butcher, he could honestly say that the bruised condition of Irish cattle was a disgrace to all concerned, and apart from the monetary loss it entailed upon them, it was discreditable to their humanity, that the unfortunate animals should be subjected to such unnecessary cruelty.”

Mr. Thos. Nelson thought a good deal of the bruised beef they had to complain of was done when the cattle were being discharged.

Messrs. John Swan and Sons wrote,—

“ We have for the last thirty years taken every means to draw attention to the shameful treatment that Irish cattle are subjected to in transit to this country.”

Mr. Robert Gorman, Sligo, wrote,—

“ At this port, cattle have often to be in for inspection at four or five o'clock, and then the steamer will not be sailed at an hour to accommodate the cattle, so that the cattle have to stand on hard flagging until three or four o'clock the next morning, or until tide suits, so that cattle which have to walk ten or fourteen miles to steamer from country, have to fast perhaps for two days and two nights before getting taken off the steamer at Glasgow.

“ Five or six cattle are put into pens so they can tear or

injure one another on the passage, and if in a storm the beast happens to fall, then the others get bruised or perhaps killed."

Mr. McKenna, Dublin, telegraphed,—

"I have known my cattle deteriorate thirty per head between Glasgow and Dublin."

Mr. Westley Richards telegraphed,—

"Better means of transit and supervision of cattle between Ireland and this country absolutely necessary. Present arrangement most unsatisfactory. Cattle injured and deteriorated in value."

The fleshers of Glasgow stated,—

"That in many cases the animals die on the voyage in consequence of being trampled upon or gored by their companions, and even where the animals arrive at the Port of Glasgow, they are so bruised by having to pass through too narrow hatches when being shipped or landed, and by falls, goring, or other calamities, that they are quite unfit for human food when slaughtered. While the animals may have been, as before stated, greatly injured during shipment or landing or on the voyage, this does not always appear at the time when the animal is exposed for sale in the public market, but on its being taken to the slaughter-house and killed and dressed, the bruises are then apparent, and your memorialists, or such of them as have purchased such bruised animals, have to suffer the loss, there being no recourse at law against the vendor."

While the editor of the *Meat Trades' Journal*, the recognized authority of the trade, in its issue of February 16th, 1889, states,—

"After a voyage of ten or twelve hours across the Channel, Irish cattle are frequently landed at Liverpool, Holyhead,

or Glasgow in a damaged condition. It often happens that beasts are killed outright by being trampled upon or gored by their companions.

“Only when the beasts are killed and dressed for the meat markets can the full extent of their injuries be learned, and then it not seldoms happens that the carcasses are almost or entirely unfit for human food. The consequence is that English and Scotch buyers avoid Irish cattle altogether, or assure themselves against loss by paying about ten per cent. a lower price than they would otherwise have given. Considering the extent of the trade, the loss to this country is enormous. Apart from that, there is the question, which humane people cannot ignore, of the suffering inflicted upon the poor brutes.”

The American and British manner of dealing with a subject thus set out are eminently characteristic of the agriculturists of the two nations. Thus—immediately science discovers means by which refrigeration can be practically applied and utilized in the distribution of perishable foods, then all considerations for vested interests are cast aside by American dealers, and the new system readily adopted, while the British dealers let the matter rest for years, occasionally meeting, grumbling and going on as before. Meanwhile the food of the people is wantonly suffered to waste, the deficiency being replaced by importations from abroad, for which money is drained out of the country. The trade may continue to meet and complain; they may bring animals across the Channel in feather-bedded

swing cots ; they may construct a tunnel under it and carry the cattle in parlour cars ; they may build a bridge over it, lay it down with grass, gently walking the beasts over that they may feed as they go ; they may even pour oil on the troubled waters of the Channel, asphalt it and ride the cattle over in sleighs ; or adopt any and every other means that the wildest imagination may suggest, but they will never stay the shrinkage that naturally takes place in the flesh of animals during transit, and the loss of food and money that is the consequent outcome of it. The only means that will remedy the disaster we suffer from in this direction, that is at once safe, simple, and effective, is to slaughter the animals in Ireland and send the carcasses over in refrigerators, when there will neither be shrinkage or depreciation, but an improvement in condition from the cool temperature in which it is carried.



CHAPTER XIV.

Anomaly Ten.

CONVERTING PORTIONS OF EACH ANIMAL INTO
MANUFACTURING INSTEAD OF FOOD PURPOSES.



THE advantages derivable from properly dressing portions of the so-called offal while fresh from the animal are well understood abroad, where, instead of their being allowed to drift into garbage and fill the surrounding atmosphere with noxious vapours to the detriment of the health of the residents of the district, they are converted into nutritive and palatable foods of the most digestible character. These upon being prepared in an appetizing and presentable form that renders them acceptable to the public, at all times meet with a prompt and remunerative sale, and as a consequence of this improved value of the offal upon realization of their live stock, producers in the ordinary course of trade, secure a relatively better price.

Contrasting Paris with London, as an instance

of what is done in this direction by others and left undone by ourselves, it is simply incredible that the customs practised in the two leading cities of the world, which are in close proximity to each other, should differ so widely and should have differed for so long a time.

The two practices are as wide apart as the poles are asunder, the system of slaughter in one place being that of concentration, while in the other it is that of isolation.

The benefits derivable from concentrated slaughter, were discerned by the first Napoleon, who early in the present century brought the system into existence, and enforced its general practice, the outcome of which resulted in such a marked sanitary improvement, while the practical working proved to be so decidedly advantageous to those interested, that it has been and continues to be the means, by which the supply of animal food that Paris receives is dealt with.

It was so far back as February 9th, 1810, that the French authorities issued a decree providing for the suppression of all private slaughter-houses at Paris, and the establishment in their places of five public abattoirs, three on the right, and two on the left banks of the Seine—the districts together with the

extent and number of slaughter-houses, each of these abattoirs comprised, were—

Abattoirs.				Acres.	Slaughter-houses.	
Montmartre	...	...	...	8 $\frac{3}{4}$	...	64
Grenelle	...	...	...	7 $\frac{3}{4}$	...	48
Der Roule	...	...	...	5 $\frac{3}{4}$	...	32
Menilmontant	...	...	...	10 $\frac{1}{4}$	...	64
Villejuip	...	...	...	5 $\frac{1}{2}$	...	32

Each slaughter-house occupying an area of 60 $\frac{1}{2}$ square yards.

These five abattoirs were constructed within the barriers, and equally situated at an average distance of about one and three-quarter miles from the centre of the city—they were completed in 1818, each of the abattoirs comprised four distinct divisions, viz. :—

- 1st. The lairage for live animals.
- 2nd. The slaughtering chambers.
- 3rd. The triperies for the preparation of portions of the offal.
- 4th. The melting-house for dealing with the fats.

Each of these divisions was designed, and carried out with the view of advancing the interests of producers and consumers, thus—

The lairages were spacious, very airy, and kept clean, so that the animals might rest, and be in a natural condition, when slaughtered, to furnish healthy meat.

The slaughtering-chambers were erected round a paved yard, each with slight side inclines, having trapped drains in the centre through which all liquid matter would run to the main drain, a supply of water with taps at each corner furnished ready and effective means for continually cleansing the floors of the chambers—a hollow trough in the pavement received the blood, and windlasses, pulleys, &c., allowed the suspending of the carcasses with the minimum amount of handling, while the roofs of the building projected several yards, so as to protect the interior from the rays of the sun, and thereby maintaining a temperature in the interior of the chamber a few degrees lower than that of the surrounding atmosphere. It was found even in those days that this primitive means of refrigeration tended to keep the meat in good condition in the summer and prevented flies from attacking it.

The triperies consisted of various workrooms abundantly supplied with hot and cold water and fitted with the necessary plant and appliances for cleaning, scraping, washing, scalding, boiling or otherwise treating the intestines, tripe, liver, lights, and other internal portions of all animals, the different parts and also the calves' heads and feet, sheeps' heads and

trotters, bullocks' heads and legs, being specially dealt with, each in separate places.

The melting-houses contained several stoves and boilers, each of which were capable of holding at least one ton of fat.

Ample accommodation for housing all the employees engaged at the abattoirs, was provided in their immediate vicinity.

The code of regulations for managing and controlling the working of the abattoirs and the conduct of those employed in them, dealt with every point of detail in a most exhaustive manner—the principal of those that relate to public health were that—

7. Animals that die a natural death are unfit for human food—must be declared to the police, who are to send them to the menagerie.

48. Animals only to be slaughtered at the abattoirs.

52. Butchers to provide proper blocks, tubs, buckets, wheelbarrows, and other necessary tools, which must be kept clean and in good condition.

64. Prohibition of entrance to the cattle-sheds at night with naked lights.

68. Prevention of the slaughter of animals at night without notice to the police.

69 to 79. Provisioned against leaving the doors open while slaughtering—compelling the slaughter-chambers to be washed after killing—prohibiting the accumulation in the scalding houses of any tallow-grease, dung, intestines, skins, hair, skulls, or deposits of any kind, causing the walls, floors, and doors of the slaughtering-chambers to be frequently scraped and washed.

96. Compelled the fat resulting from each slaughtering to be melted at its own abattoir only, and *immediately after slaughter*.

132. Ordered that the entrails of all animals slaughtered in each abattoir be *dressed and prepared* in the tripe establishment of that abattoir *before they are removed*.

141. Compelled butchers, melters, and tripe-boilers to employ covered carts for the carriage of their meats and other goods.

155. Ordered slaughtermen to give immediate notice to the police of all calves found inside cows they slaughter, under the penalty of imprisonment for neglect.

261. Ordered that the larger entrails can only be sold after they have undergone proper preparation in the triperies of the abattoirs, to which they must be immediately removed, and general provisions that all animals intended

for food are to be subject to special inspection, and if found to be attacked with or suspected of being attacked with any contagious disease, they are not to be slaughtered at the abattoirs. That all meat must be inspected after killing, and any found deteriorated, diseased, or putrid, to be seized and condemned. That condemned animals are to be removed to and dealt with at the knacker's abattoirs, under the regulations by which they are governed, &c., &c.

The whole of the clauses in the regulations exceed 350 in number, and provide in every conceivable manner against bad meat being sold to the public.

A few years since it was found that the facilities for transit to all parts of the city of Paris enabled speedy delivery to be made, and that greater benefits would be derived by the further concentration of the slaughtering of animals, and this measure was carried out by the transfer of the works of the five abattoirs to the vicinity of the market of La Villette, where the slaughtering is at present carried on for the whole of Paris, but under similar practices and regulations to those referred to. It will thus be seen that our next-door neighbours have for nearly the whole of the present century recognized and utilized the advantages derivable from the preparation

of a large portion of each beast immediately after slaughter, which they convert into delicate, appetizing, digestible and nutritious foods of a valuable character. Those interested in this branch of industry should visit France and inspect the course of procedure and examine and partake of the varied articles of food disposed of by the "Tripeistes" and "Charcutiers" of Paris; many of which, like the "Tripe de Caen," have contributed to the high national character the French have acquired for good cookery, while we allow similar commodities to drift into substances one remove from valueless and pernicious garbage—an expensive incumbrance to those who own them, the causes of annoyance, a vitiated atmosphere, and the spread of disease in the districts where produced, while the people are deprived of the large amount of food material that these productions would represent if properly dealt with, the value of which would indirectly reach our farmers and contribute to their profits. Return and then watch some of the railway-trucks that reach the Lancashire and other manufacturing districts every morning filled with bullocks' paunches from our slaughter-houses, from which the contents have simply been emptied and which are still covered with the dung and filth

that adheres to them, creating a pestilential atmosphere as they travel and are unloaded.

Let them trace the destination of these masses of indescribable filth to the out-lying districts of Manchester and Salford, following them through the various stages through which they pass to be chemically cleansed, and whitened in appearance, until they reach the small shops where the material is sold to the poorer classes in the manufacturing districts, whose limited means deprive them of the ability to procure anything more substantial and nourishing, but who are unaware of the nature of the eatables they partake of, and of the effects its general consumption creates upon the health of themselves and of the people in those localities.

Let them also visit some of the numerous tripe-shops, pork butchers, and eating-houses in the low quarters of London, and note the articles of food vended to the residents of those districts. They will then discover a marked difference in the course of procedure adopted by the people of two adjoining countries, and in working out the relative pecuniary results derivable from them, they will find that the Parisian system of concentrated slaughter, which enables portions of the offal to be

effectively dealt with, and presented in a tasty appetizing and palatable form, establishes an increased value from this source alone in connection with all classes of animals—that in the aggregate reaches a very large sum indeed in money, and also results in the provision of a considerable quantity of viands of the highest character which is brought within reach of the people. That a similar system, if applied to the whole of the live animals of the United Kingdom, would result in adding several thousands of tons annually to the enjoyable food of the people from home-grown sources, and in our farmers receiving annually a very considerable amount as an addition to their profits; a quantity that would go far towards adding to the comforts of many poorly-fed persons in all classes, and a sum that would do much towards mitigating the existing distress in agriculture.

But the inquirers in this direction will discern another fact of a startling and more important character than the pecuniary result referred to, they will discover that the foods that have thus entered into consumption abroad, have been largely productive of health, happiness, and contentment in many homes not necessarily poor, while our own foods have been the means of generating disease, with all its concomitant evils, among the poorest of our people, as it is

only those who are driven by necessity to the tripe-shop, where cats' and dogs' food are usually displayed with that of human beings, that partake of the foods that have been so unnecessarily allowed to drift into a filthy character.


It is not, however, from France solely that evidence is derivable of the benefits to be obtained from the utilization of offal. Belgium and many other portions of the Continent carry out the same practice that has proved so beneficial to the French people, while the great abattoirs of Chicago, St. Louis, and other cities of America, derive their success solely from the advantageous results that have accrued to them from the system of the concentrated slaughter of live stock, by which the better realization of boiling joints and fat, together with the utilization of offal, and other material which we consider waste refuse, can be profitably effected.

While they continue to work in their way and our farmers plod along in their own ancient and primitive style, the advantage will be twenty to twenty-five per cent. in favour of our American cousins, who thereby are enabled to enter our markets with their coarse meats and offal, which they sell at a profit, and can thus successfully compete with our farmers on their own grounds.

CHAPTER XV.

Anomaly Eleven.

PREVENTABLE DISEASE.

O far as meat is concerned, farmers prospered in olden times, when prices were low; while in recent years, when prices were high, they have suffered severe losses. This is explained by a continuous serious diminution in the quantity and quality of the meat produced, arising from the large amount of disease that has prevailed amongst live stock; and while feeders have been receiving a higher price for such of their meat that was of prime quality, they have not had the same quantity of this description of meat to dispose of as formerly, a large portion of what is now produced being of an inferior character, having to be usually sold at a middling and often at a very low rate.

The beneficial arrangements that may be made in the various operations incidental to meat production are numerous, although the opinions respecting the results derivable from

them vary, and will continue to do so while the present isolated system of working practised by our farmers is maintained; but there can be no doubt that a larger development of the system of housing, and feeding live stock in well-protected, ventilated, and drained barns, during inclement weather, will lead not only to the avoidance of a large amount of shrinkage and disease, that now takes place in animals in cold weather, but to their continued increase in weight and earlier maturity; thus the serious losses from which farmers and the country now suffer would be avoided.

The wide extent of the losses from these causes may be partially gathered from the general quotations for the large quantity of inferior meat reported upon from most of the markets throughout the country, but fully realized by a reference to the returns of the agricultural department for the year 1886.

Under the head of calves it states:—

“Young cattle have decreased 68,327, or 2·6 per cent.”

“The inclement weather during last winter, combined with the great scarcity of keep, are frequently noticed as having told severely upon the last-mentioned class of stock.”

“Sheep and lambs taken together show a

decrease of 1,013,900, or 3·8 per cent. less than the number of 1885."

"The collecting officers report that the lambing season, owing to the severe weather in the spring, was unfavourable—in the majority of districts all mountainous or hilly counties throughout Great Britain suffering especially from this cause; thousands of sheep were sent to the butcher only half fat, at weights of seven to eight stones, instead of ten to eleven, while the losses sustained by individual owners from severe snow-storms in many of the counties of Wales and Scotland have been serious; in Cardiganshire, one farmer alone, it is stated, lost 2000 sheep from this cause, the whole county having experienced a diminution of 30,000. In the counties of Carnarvon, Denbigh, Montgomery and Merioneth, the deficiencies severally amount to from 20,000 to 74,000 head."

"In some of the Scotch counties the decrease shown is likewise especially great. The following English counties have also suffered diminutions, numbering over 20,000 each county:—Cumberland, Kent, Lincoln, Norfolk, Northumberland, York."

With these facts and figures before us, it may be readily estimated that the meat crop has suffered a special loss of at least 5 per

cent., or four and a half millions sterling, owing to farmers not having made the necessary provisions for housing their live stock in winter.

The painful condition of things thus disclosed cannot fail to be condemned by all classes except those immediately concerned ; and were the Society for the Prevention of Cruelty to Animals, to take steps to hold farmers responsible, for the infliction of this unnecessary cruelty upon their live stocks, the means for making proper provision to house them would readily be found.

An inquiry will show that irrespective of the depreciation in quality, the actual loss of meat from this cause is by far greater than the quantity of meat imported in a live and dead form ; the value of which is twelve and a half millions sterling annually, this loss has formed a direct reduction, not of farmers' revenue only, but of their profits.

The alarming extent of the disease in live stock, and its consequent losses, is evidenced by three circumstances : firstly, by the quantity of inferior meat sold in the markets ; secondly, by the large number of cases of the sale of diseased meat that are continuously detected all over the country ; thirdly, by the specific examinations of the

carcases of animals that are made by the Jewish authorities of all live stock slaughtered under their supervision, which for years past have shown that over 40 per cent. of animals slaughtered suffered more or less from lung or other diseases, and were rejected as unfit for human food—a fact fully confirmed by Dr. Carpenter in the *British Medical Journal* of October 7th, 1879, where he states that an inspector of the Metropolitan Meat Market declared on oath that 80 per cent. of the meat sent to the London market had tubercular disease.

An inquiry into the nature and causes of this result may show that the sickness has largely arisen from the practice of forcing the speedy fattening of stock by over-feeding, which has not been accompanied by that general attention requisite to the care of animals, whose systems have thus been rendered more susceptible to climatic changes than if they had been fed on natural grasses, and allowed to mature in the ordinary course of nature, and who have suffered by exposure to weather for want of proper housing.

When the rapid and great loss of flesh, that a human being will sustain from a few days' illness is borne in mind, coupled with the knowledge that the meat, from diseased animals is specially

known by its emaciated and flabby appearance, it will be readily understood that a beast may very quickly lose 10 per cent. of its flesh, which would be one hundredweight of meat without bone.

It will thus be seen that the aggregate weight of meat lost from the great number of animals affected must be very large indeed, probably exceeding the weight of meat imported.

To this loss of weight must be added the depreciation in the quality of the meat remaining, which together will be found to reduce the value by so enormous a sum as to be sufficient in itself to account for the depression in the agricultural interest; to this sum must be added the still further loss in weight that takes place owing to the reckless system of distribution and realization.

It will thus be seen that by the waste in production under the head of preventable disease our farmers not only do not breed and feed their stock so as to obtain the largest amount of prime quality meat at a minimum cost, but that they annually suffer unnecessary losses that may be estimated at:—

Firstly. By loss of weight	
from improper housing,	
5 per cent.	or 4,500,000/.

Secondly. By loss of weight from disease capable of prevention or remedy, 5 per cent. or 4,500,000%.

Thirdly. By depreciation in quality, 5 per cent. „ 4,500,000%.

or a total sum of 13,500,000% from these sources alone, which forms a direct decrease of their profits, and a marked diminution of the food of the people that might be avoided by proper treatment, care and attention.

The day cannot be far distant when subjects of this class will be taken into consideration by the people themselves—and it will then be discovered that while producers have a perfect right to waste their own substance by neglect, inattention and ignorance, they have a duty to perform to society, and cannot be permitted to suffer any portion of the food of the people to be wasted or rendered useless.



CHAPTER XVI.

Anomaly Twelve.

INDISCRIMINATE SALE.

THE utter want of consideration which British farmers have for their own interests, is strikingly exhibited by the grossly careless manner in which all perishable home-grown food produce is sold by them, a course of procedure being followed in connection with it, in every branch of agricultural industry, by which the home producers deprive themselves of imperceptible small amounts, on all their transactions which in the aggregate reach an enormous sum. These small amounts if judiciously saved would materially alter the nature and extent of their profits, and have a material effect on the prevailing distress, as may be seen from a glance at the existing situation.

It is admitted on all sides that, where attention has been given, the quality of all home produce is without question, when fresh, the

best the world produces ; therefore its value naturally should be higher than similar commodities imported from abroad.

Where animals are maintained in good health, the meat produce of the British farmer stands out prominently as unequalled for its nutritive and savoury properties, and it will be many a long day before the roast beef of Old England, gives place in character and condition to the meat imported from any part of the world, —coupled with this feature there also exists the fact of a strong desire on the part of the public of all classes to partake of English meat, and to pay a higher price for it,—in addition to which a strong prejudice against the consumption of imported meats continues to grow in all directions ; yet the anomaly is everywhere to be found of imported and home-grown meats being sold together, in many districts indiscriminately, without any distinction being made in the description or price by the butchers to the buyer.

In connection with these transactions, a singular feature worthy of being noted, is the fact that when the butcher buys home-grown, meat, unless for the very choicest quality in bare markets, the wholesale price of the meat is determined by the quantity on offer

and current value of the American importations, and a levelling-down process takes place, to the detriment of the British farmer ; while, when the butcher sells the meat by retail, the price of the American or imported meat is brought up to that of the standing price at which English meat is usually sold to the consumer, and in connection with that a levelling-up process takes place, to the benefit of the butcher and detriment of the consumer, while, at the same time, home-grown meat is deprived of its legitimate position in the national commissariat.

With pig products the result is to a marked extent the same. York hams, Wiltshire bacon, and dairy-fed pork, are standards of excellence that guide the British consumer, and these items are quoted by the leading tradesmen, in their respective branches, as articles by which their customers may be tempted. Yet enormous quantities of pork are imported in its pale or salted state, to be cut into the known shapes of the joints of the various districts, and when dried, cured, and marked, to be sent into consumption as the produce of our own farms, and thus, by a dishonest competition, not only reduces the price that home-grown produce should realize, but by introducing poorer bred

and fed meats, depreciates the character for excellence by which they are known.

Until our farmers appreciate the effect of this situation, and take steps by combining to prepare their goods for sale, and to regularly brand them in a way that they may be known by the public as home-grown produce, these adverse conditions must continue to exist and increase.

Again with wheat. It is well known that no wheat in the world will produce such remarkably highly nutritive, healthy and appetizing bread as the mild, mellow, flavoured and glutened wheats which are the natural products of our soil and climate; the fine flour of which is unequalled in any one distinguishable point; and, if the bread made from it was distinctly procurable, would be in such heavy demand as to create an extended inquiry for the home-grown wheat, resulting in higher comparative values being established for it. This in time would lead to a profitable production, and as a consequence to a larger extent of land and labour being occupied in its cultivation, irrespective of the quantity imported or what the ruling price of the current markets for imported wheats or flour might be. Our agriculturists, however, stand quietly by and look on while their high-

quality corn is smuggled into consumption with foreign importations, and is utilized in small quantities to give a flavour or character to the bulk of importations from other countries, the values of which are advanced, with the result of minimizing the value of our own produce, just as in Spain, a gallon of fine old high-class wine is added to a hogshead of new and immature wine, to give it a bouquet, tone, and character.

There are important features in connection with home-grown and imported wheats, that farmers should not only thoroughly understand themselves, but they should also take every possible means to make the public acquainted with them. They might then be placed upon an equality, and readily rely upon the ordinary laws of supply and demand, to regulate the prices for their produce, which would adjust themselves in accordance with the extent of the available home-grown crop, irrespective of the supplies from abroad that would be imported into our own markets.

At present the values of home-grown wheats are reduced to, and maintained at a low level in consequence of a preferential demand by the trade for those that are imported, owing to the facility with which they lend them-

selves to effect a gross fraud on the consumers. Bakers demand from their millers flours from imported hard "water-drinking" wheats, not because they are better, or that home-grown are not procurable, but owing to the fact that they will absorb so much more water than the flour from home-grown wheats, that a greater out-turn of bread is obtained from them; the usual estimate being that ten more 4lb. loaves of bread can be obtained from a sack of the former than from a sack of the latter flour.

The millers are therefore compelled to buy imported hard wheats, to supply the requirements of their bakers, and the inquiry for home-grown wheat is thereby materially reduced, and its price consequently lessened, to the direct loss of the British farmer, and the indirect loss of the British workman.

Meanwhile the consumer suffers, for he is being supplied with bread made from imported hard water-drinking wheat, which contains ten per cent. more water, and consequently of not the same nutritive value that it would be, if it were made from the mellow and flavoured home-grown wheat.

It may well be asked, if the milkman is punished for adding water to his milk, why

should the baker who adds water to his bread go free? Working men at their clubs will find few questions for discussion that present features of such personal importance to themselves individually and collectively as the character and relative nutritive values of the bread they eat, and the prices paid for it.

These facts are not known to the consumer, and it is to the interest of the farmers that they should be made acquainted with them, and every encouragement given to those who would furnish bread on its merits, made from home-grown flour. A supply of bread so made, and guaranteed, would lead to a special sale, when a definite demand would be created for the produce of our own farms, and a much larger price obtained for their wheats by home growers.

In the dairy-produce branch of their business our farmers also suffer largely, by not combining to utilize their material, and place it before the public in a known form on its merits.

On all sides there are demands for fresh butter and good cheese, which cannot be supplied while these commodities reach us from abroad, made up as much in the English form as possible, and readily sell at high rates.

It is solely due to the careless and indiscriminate system of sale, owing to the want of

a regular supply of articles of a known quality and character that perpetuates this serious condition of things, and condemns the British farmer to a low price, for the irregular quantity and quality of the goods he produces.

In every direction, and with all kinds of food produce, the course of procedure is of the same reckless nature, viz., to send it somewhere for sale, without any consideration as to the possible or probable ultimate results that might be otherwise attainable.

It is wholly and solely owing to this circumstance, that home-farmers realize only the minimum value for their produce, which they blindly thrust into competition with that imported from abroad, instead of keeping it in a separate and unmistakable form that would be well known to the general public.

When our farmers can arrange to properly sort, classify, pack, and mark their goods in such a way that they will be known, and can be purchased by consumers as the produce of English farms, by English farmers, then, and then only, will they reap the benefit of their established well-known character, and secure the increased value they are entitled to for their food products, materially adding to their own profits, and the wealth of the nation.

CHAPTER XVII.

Anomaly Thirteen.

SELLING GOODS IN BULK.



MATTER that prevents a considerable portion of the amount paid by consumers reaching producers, arises from the manner in which the goods are packed for disposal. With British farmers themselves, and also their agents, the custom is to do their business in a wholesale way, which necessarily involves the intervention of a further number of intermediaries. Meat is sold either alive or by the carcase or side ; butter by the firkin ; fruit by the bushel, sieve, or sack ; and the least possible quantity a buyer can take is one of these items, which can only be handled by those in the trade, and they must be in a position to sell the whole quantity while fresh or they will lose money by the portion remaining unsold.

Thus, if a butcher in London or its suburbs has a special trade that requires a certain quantity of joints of roasting beef, and upon

which he could make a reasonable profit, in the ordinary course of his business, he is compelled to purchase a side or quarter of beef which contains a quantity of boiling joints, and coarse meats that he can only dispose of at a loss. Again, if he requires a quantity of boiling joints or coarse meats, he is compelled to buy the roastings, which possibly do not suit the particular requirements of his customers. If he requires some legs or loins of mutton, he is obliged to purchase also shoulders, necks, and breasts, or he must go to a "bummaree" or middleman in the market and pay an extra price for the portions he wishes for.

So far as London is concerned, these unfavourable conditions are owing to the non-recognition by farmers, of the marked change that has taken place in the conduct of the butchering business since the suppression of private slaughter-houses in the metropolis. The retail butcher of the present day, is to a large extent simply a meat-dealer, buying daily in the wholesale market the stock he requires for his business. He can obtain his supplies from the salesman, who is the farmer's agent, the carcass butcher, or from a wholesale meat-dealer known in the markets as a "bummaree." If he deals with the former, he

has to purchase what he does not require ; if with the latter, he has to pay a larger price for the accommodation.

If farmers, by combination, were to slaughter their live stock in their own districts, they could sell to the different classes of retail butchers just what meat they required ; thus the butcher of the West, with his high-class establishment trade, the butcher of the outlying suburbs, with his quiet family trade, and the butcher of the East, with his quick cutting trade, would all be able to advantageously supply themselves, with the particular class of meat they required for their customers, and, it being delivered direct to them from the slaughterhouse in the country, considerable expense would be saved.

As with meat so it is with butter, cheese, fruit, and every article of farm produce, a large expenditure is unnecessarily incurred in distribution, by the reason of improper packing at the point of production, in a form not within reasonable approach to the requirements of buyers.

But the packing is not the sole difficulty. The want of a properly effective, and generally understood system for the classification of all articles as to quality, character, and condition, limits the number of buyers who can be treated with. This is not the case with the farmers abroad ;

the American at home recognizes and advantageously puts into practice two golden commercial principles unknown to the farmers of this country. The first is, that the nearer their packages of produce are to the requirements of consumers, the less number of middlemen and handling are required in their distribution ; the second is, that by properly and effectively classifying the contents of their packages, their produce is not only in a position to reach distant and unknown purchasers in every direction and at any distance, but can be safely purchased by the known description ; whereas if it is packed in a general and promiscuous manner—the same as is the practice of the English farmer—it must of necessity be sent to an adjacent market, for disposal to those that can attend that market, and to whom the sale is limited.

In this way the Americans exhibit a sound commercial knowledge ; by their practice they command an unlimited number of buyers, and can supply bare markets where prices invariably rule high, while the English producer is confined to the one local market in his neighbourhood, and those that attend it: this is invariably glutted, and in consequence prices rule low.

It is important for all British producers to make themselves acquainted with the advan-

tages of packing so as to benefit by the principle that the smaller the package the wider the area of consumption, and the longer and better will their contents keep in good order and condition.

Also to recognize, with fruits especially, that selection as to size and colour, with regular packing, is the best means for ensuring speedy sales in extended districts at good prices.

Further, that goods packed, branded, and numbered, that their contents and condition may be known without a personal inspection, will lead to their being sent for by purchasers in remote parts, whose convenience or ability does not allow them to attend a market personally.

And that specially choice commodities, suitably packed for display in the shop windows, or on the counters of retailers, will at all times command extremely high prices.

Referring particularly to the marketing of green fruits, to which all the above remarks apply, it may be noted that this branch of agriculture offers great results for any attention paid to it. Its peculiar character demands special treatment, and to ensure highest prices for them is essentially a matter of commercial experience.

To this end all fruits should be properly

sorted and classed as to character and condition into "choice," for special high-class trade; "prime," for first-class trade; and "ordinary," for general trade, and then assorted as to description into firsts, seconds, and thirds sizes.

Choice and prime fruits should be packed into clean, bright, and carefully-made packages, so as to present to the buyer a luscious, attractive and tempting appearance. Ordinary fruit may be packed for general sale in smaller baskets than at present.

Growers should remember and act on the fact, that a barely perceptible taint or speck that is carelessly dealt with by the packer at the farm, will in a short time become an odious blemish, and by the time the fruit reaches the market, it not only becomes spoiled itself, but damages other fruit and spoils its value.

A good crop requires marketing with commercial experience and judgment. A combination of growers to amalgamate their crops, in order that large selections of particular descriptions might be made available for disposal in special directions, and in districts where required, would lead to larger prices being received.

The establishment of a system of standard

qualities and classifications, for all food products, by the Royal Horticultural and Agricultural Associations of the Metropolis, in a form that would be easily recognizable by the public throughout the United Kingdom, coupled with growers' own registered trade-marks and brands, that home-grown produce, its quantities and qualities, may be prominently known in the markets, to the trade, and by consumers, would largely tend to the advantage of producers.

The above conditions are absolutely requisite and necessary to enable fruits to be beneficially realized ; they cannot be effectively carried out by any one grower, or even by a body of growers, unless they are possessed of a larger amount of commercial knowledge than is usually found among farmers, who, as a body, give all their time and attention to totally different matters.

The sound, practical, and legitimate course for producers to pursue, is for all within the area of a reasonable district to co-operate with each other for the realization of their crops in connection with one central organization, which would undertake the whole of the clerical and commercial duties incidental to distribution, and take upon themselves all the financial responsibilities and risks, and receive as their remuneration and repayment a commission upon

the amounts received by the sales of the produce.

From such a combination of agricultural and commercial experience the highest results might be anticipated, inasmuch as the members of the local organization, would manage the preparation of their own produce in a definite and systematic manner, of which they would be from time to time informed and advised, and by which they would control their expenditure, and keep it at the lowest limit. They would have the benefit of an organization to aid in the direct distribution of their produce, in large or small quantities and in all directions, whose importance and effectiveness would grow with the increase of the local societies. Under the present system the brokers absorb very frequently nearly all the amounts received as the proceeds of the sale of the fruits, vegetables, or fish—sometimes they absorb absolutely all—while the organization, instead of requiring as at present certain fixed sums, irrespective of the amount realized, would be content to receive a brokerage or commission as its recompense, thus leaving with the sellers at all times a very large proportion of the amount realized.

CHAPTER XVIII.

Anomaly Fourteen.

UNUTILIZED SECURITIES.



THE indirect injuries that farmers inflict on themselves are as remarkable in character as, in the aggregate, they are extensive in amount.

An important item, under this head, will be found to arise from the dormant capital in the form of unrealizable produce, that the farmers hold possession of, and do not utilize by rendering it perfect as a negotiable security.

Thus, whenever a farmer requires financial assistance from his Banker, which almost every one does at some period of the year, owing to his inability to submit a definite security, he naturally has to pay more interest for the accommodation than if he had a complete and unimpeachable security to offer. This he would be in a position readily to do if he combined with his neighbours to properly classify, store, and dispose of his produce.

The American farmer, no matter how remote

his farm may be from the radius of civilization and commerce, or how little he may be known to any banker of his own or other district, or whatever his actual means or financial position may be, has readier facilities for obtaining cash advances on the security of his produce, than the old-established English farmer, who has possibly resided in his district all his life, and whose property has been in the hands of himself and family for generations.

The simple course that the American backwoodsman adopts is to send his crop of corn, maize, or oats in to the elevator, which is the American term for a public granary. On arrival there it is weighed and classed by independent public experts, who thus define its quality according to the scale of a given standard, by which all the transactions in produce in America are governed. He promptly receives a certificate, declaring the quantity and quality of the produce that is in the elevator to his account, and delivery to the order of the holder of the document, which is neither more nor less than a warrant similar in character to those that our dock companies and warehousemen issue for the goods they have in charge.

This certificate is an absolute security to the extent of the current market value of the

produce it represents, and is as exchangeable as a bank-note. Parties are always ready to take the warrant over at the spot value of the produce for cash, or if the owner wishes to hold over for a rise in value, or transfer the goods to another market where he fancies better prices will rule at a later period, he may readily do so, and any bank will advance nearly the whole of the then current value of the goods the certificate represents, at the lowest rate of interest current at the time.

In America produce certificates are considered among the best of securities, and the farmers there in this respect are in a better position than any trader who can only offer the banks commercial paper for discount, which, however good it may be, is subject to a margin of risk.

But our English farmer cannot deal with his produce in this way; he stores it in his barns, its quality and quantity are known only to himself, his landlord may come down upon him for rent, or his creditors suddenly pounce upon it, it is subject to depreciation, and to risks from fire, water, vermin, and from many other contingencies that destroy its value as a security.

Certainly the farmer may, if he wants it, obtain a loan from his bankers pending realiza-

tion, but it is the man which is the security, and not the produce. If, as is very often the case, the farmer is weak, he can get no advance from his banker, and must resort to his miller, and then comes the haggling and dealing over the price, quality, and quantity; the allowances for this, that, and the other, that the needy farmer is bound to make to his buyer. Or if he takes it to his local market, the haggling and dealing still go on, and the time lost, and expenses incurred over the transaction makes a perceptible difference in the result; that is to say, that the American farmer who sends his crop, whether little or much, good, bad, or indifferent, into a public elevator, at once knows its value, not only on the spot, but at all the principal markets in America, and can there and then sell for delivery at any place, at the current price ruling at the moment, and receive his cash.

The position herein set forth as to home farmers is applicable to nearly the whole of them, the difference in the nature of our own and the American transaction may not be known to them, but assuming it were, what a marked saving of waste of time alone it would be to each if carried out.

The combination to sell, with the formation of local centres of collection, and the public clas-

sifying of crops, would bring about these results just the same as it has done in America.

Time is not the only item that would be saved, the farmer would have a substantial security devoid of risk with which he could deal at a minimum rate of interest, he could more readily convert his security into cash, and thus save time in meeting engagements, and avoid the payment of interest to his bankers.

While these items are to the individual farmer inappreciable, to the agricultural interest as a whole they reach a formidable amount and may be estimated as below. The average annual value of farm products is assumed to be, according to a leading authority, upwards of 216,000,000*l*.

Farmers as a rule borrow up to the hilt.

One per cent. in the rate of interest and bankers'					
commission is	..	..	..	..	..
Two months' interest at 5% per annum is	..				..
					<hr/>
					£3,960,000

Thus a saving of only one per cent. in the bankers' rates of interest and commission, and a diminution of two months in the currency of the advances amounts to the total sum of 3,960,000*l*., being a charge of nearly 4,000,000*l*. that farmers inflict on themselves by an unnecessary leakage, owing to their not

concentrating their efforts to realize their produce in a systematic and sensible manner.

But this is by no means the whole of the loss that thus arises from this course of procedure, to them must be added the waste of time, and expenses of attending local and other markets, and the still more serious loss that is incurred in the unnecessary transport, and retransport of produce, which would not be the case if there were local centres of collection, where goods might be classed and bulked, and from which any quantity could be forwarded direct to its destination.

The principle of concentration for storage and sale, is by no means confined solely to cereals, but can be made applicable to all kinds and character of farm produce. The details of organization, concentration, and disposal would naturally vary with the character of the produce; thus, while that in connection with potatoes, hay, green crops, &c., would be confined to parishes—dairy produce would be dealt in within a radius of three to five miles of a butter, cheese, or condensing-factory—fruits in larger areas, according to character—cereals might take a still larger area, while live stock would be dealt in by counties—but every kind of produce is capable of being readily and advantageously

manipulated, and the gross benefits that would arise from the arrest of one almost imperceptible cause of waste, would furnish agriculturists with an annual amount of additional profit of considerable extent.

By pursuing this system of organization amongst themselves, farmers would at once secure a definite position of an unmistakable character—they would be enabled to enter into communication with the industrial co-operative societies in their own districts, and find ready purchasers for all they had to sell. In another portion of this work will be found a map of England, showing the counties with their population, the number of co-operative stores with their members, also detailed particulars showing the simple manner in which farmer's co-operative societies may be formed and worked.

CHAPTER XIX.

Anomaly Fifteen.

IMPORTED AND HOME-GROWN WHEATS.

IN the general impression that exists with all classes in respect to our wheat productions, will be found an important characteristic feature of the disorganized system which underlies our practice and principle of food distribution. The public believe that we cannot grow sufficient wheat for our requirements, while our agriculturists cease its cultivation, owing to the low price they receive for their produce, by reason of the unfair competition to which they are subjected in the course of realization.

This peculiar serious disadvantage is owing solely to a lack of vigilance on the part of our farmers. Imported wheats have acquired a position throughout the country to which their quality and character do not entitle them, in comparison with the home-grown article, whose flavour and general characteristics as a nutritive and palatable food are unapproachable.

It is not the absolute requirements of the nation, that necessitates the large importations of wheat at present received ; for it is quite possible to cultivate the same area of land with wheat now as we did in former years, when our own home supplies would be greater. Neither is it that consumers demand imported wheats in preference to home-grown ; for if the kingdom were canvassed in all directions, it would be found that the question had never been asked, and that no single instance could be adduced, where a consumer who obtained his bread troubled himself in the slightest degree to ascertain where the wheat was grown from which it was prepared.

The real inquirers for the flour from imported wheats are the bakers ; and they demand it, not because it is of a better quality than the flour yielded by home-grown wheats, but because it will absorb more water, and therefore they can by its use obtain more loaves from a sack of flour.

The baker looks to the miller, to supply him with what he requires, and the miller purchases that wheat for grinding which his customers wish for ; but the bakers cannot entirely use all imported wheats, which are devoid of that particular flavour that causes bread to be

palatable. So that large quantities of the bread consumed, is made from three-fourths imported wheat and one-fourth English.

The bread from this mixture of flour is not so good in flavour as if it were made altogether from English wheat; and if the public could be supplied with bread made solely from home-grown wheats—with the opportunity afforded that they might compare both, and be guided by their own judgment—they would perceive the difference, and insist upon being supplied with breads made from home flours.

But the difference in the effect of the one-fourth consumption of flour, which bakers are compelled to carry out to give their bread some flavour, to what the result would be if they were compelled to use all home-grown while it was to be had, is that the proper demand for English wheats is diminished, and that the price at which it should be sold is materially lowered, while at the same time consumers are supplied with bread that contains a larger proportion of water, and consequently of an insufficient and inferior nutritive nature. If the friends of agriculture and its kindred interests, who continually make strenuous endeavours to get a duty put upon corn, would expend one hundredth part of the time, attention, and expense in educating the British

consumer in some of the histories and mysteries of bread and bread-making, together with the nutritive and commercial values of breads made from different flours, and the advantage of home-grown flour for breads over those imported, they would be engaged in a task that would bring about some actual, practical, and beneficial result to those for whom they agitate.

That the field for operation is large, and the material for thought to be obtained from it extensive, may be gathered from the fact that flour contains from 12 to 13 per cent. of water, while bread contains from 32 to 35 per cent. of the liquid; that while but 90 to 94 loaves of bread can only be obtained from a sack of British flour, 100 to 105 loaves can be obtained from a sack of flour of which the hard water-drinking imported wheats form three-fourth parts.

It is but fair to admit that this absorption of water is due to the presence of a larger percentage of gluten in the hard wheats; but at the same time it must be borne in mind, that the small additional nutritive value arising from the increased quantity of gluten, in no way compensates for the large percentage of water that is thus introduced into the bread, and in that form sold to the public.

The results of various analyses of bread made

by leading experts show, according to Accum, 7 lbs. of flour yield $8\frac{3}{4}$ lb. of bread; to Herbstadt, that 3 lbs. of flour yield 4 lbs. of bread; to Dumas, that wheat flour contains 10.00 water; while according to Dr. Marcel, wheat flour is adulterated with potato, starch, bean flour, alum, chalk, carbonate of magnesia, silica, clay, bone-dust, and plaster-of-Paris, either to improve or give a whiter appearance to the flour, or to make it absorb more water in manufacture into bread.

The lessons to be gathered from these facts and incidents, are the absolute necessity of furnishing the public with some special information on the manufacture of bread and its results, and also to point out to the British workman the national advantage of consuming home-grown produce, and keeping the money value in the country in preference to sending it abroad.

The natural protection of the farmers lies in the inherent desire of the British workman to partake of British produce, irrespective of cost.

This spontaneous feeling should be productive of more material benefits to the farmer than any artificial protection that could be derived from the imposition of duties; but to derive benefits from these desires, not only must the public be instructed as to the nutritive value of flour from different wheats, but they must be afforded

the facilities for procuring supplies of them without any trouble or inconvenience.

If this can once be done, home-grown wheats will attain a proper value in the market, which, for the manufacture of bread, would be 2s., 3s., or 4s. per quarter more than the relative price they now make ; while confidence being established in the minds of the farmers, they would be encouraged to produce more wheats, and many broad acres now unoccupied, or lying fallow, would be brought under the control of the plough and the reaper, yielding increased supplies, and creating national wealth in all directions.

It is impossible to estimate the beneficial extent, to which this development might reach, otherwise than to know that there would be higher prices and larger quantities.


One ready means that farmers may utilize for their own advantage will be found to be afforded by the recently passed Merchandise Marks Act.

Let consumers be impressed with the advisability of only dealing with those bakers who display in their shops the announcements, "Bread from English flour only," and the tradesmen that do that will be popular in their district, and be rewarded with a remunerative trade, while it will be penal for a baker to make that announcement and not strictly adhere to it.

CHAPTER XX.

Anomaly Sixteen.

HIGH PRICES FOR FOREIGN AND LOW PRICES FOR HOME FLOUR.

 HE importations of wheat in the form of flour instead of grain, have recently advanced in quantity in a marvellously rapid manner, the receipts having increased from 563,630 tons in 1880, to 903,103 tons in 1887, showing that in seven years the importations of flour have nearly doubled, while they still continue to become larger, with the detrimental result that the major portion of our English and Irish mills are lying still, and their employés deprived of work, necessitating a great waste of national energy, and the creation of a large amount of distress in all classes identified with, and dependent upon the milling interests.

Large quantities of imported flour are being readily disposed of at comparatively high prices to the rates ruling for wheat, a result due in a great measure to the practical recognition by

American and Canadian millers of the inherent and natural fundamental commercial laws incidental to the distribution of foods, which provide that the nearer a package is made to the size that meets the general requirements of the individual consumer, the wider is the area of demand, and more readily and inexpensively is it disposed of, while the more tastily, neatly, and presentably goods are got up for display and handling, the more energetically will retailers deal with them, bring them under notice, and press their sale on their customers, an aid which should be the principal object of sellers to attain in all efforts to dispose of goods to the public.

Actively putting these laws into definite form, the American and Canadian millers in addition to meeting a requirement of the trade by the supply of their flour in bags or half-sacks of 140 lbs., also forward a very large portion of their flour packed in small calico bags of $2\frac{1}{2}$ lbs., 5 lbs., and 10 lbs. each, to meet the domestic wants of families.

As a consequence of this movement, while the sale of English and bulk-imported flours are confined to the bakers who make them up in their paper-bags in the old-style quantities of quarterns and half-quarterns—the imported flours are taken in hand by the grocers .

throughout the country, who find in them a new article of stock ready in sale, profitable in character, and so inexpensive in nature, that they have every inducement to make it a prominent feature in their display, and they continually bring it under the notice of their customers with the usual result of enlarging the sale.

Upon reference to the price lists of any of the wholesale grocers who deal in imported flours it will be found that the prices at which these small bags are sold, if worked out, is equal to from 15s. to 20s. more per quarter than the current price that our farmers receive for their home-grown wheats; thus, when the market price of wheat was 30s. 6d. per quarter, the wholesale prices of the bags were—

2½ lbs.	4s. 10½d.	per dozen,	equal to	45s. 6d.	for 280 lbs.,	or a sack.
5 „	8s. 5½d.	„		38s. 6d.	„	

and respectively 58s. 5d., and 55s. 5d. for the 359 lbs. of best flour obtainable from a quarter of wheat, to which must be added the value of the seconds, pollard, bran, and offal, the additional produce less the cost of grinding, which will be found to yield a gross return for a quarter of wheat realized by its disposal in this form which will contrast most favourably with

the amount at present received by our farmers for their grain, and it does appear that those who continue to strive might and main, for the infliction of a miserable few shillings as a protective duty on the importation of corn, are, by the neglect of attention to this important point, literally fulfilling the well-known phrase of straining at a gnat and swallowing a camel.

A tithe of the loss of time, attention, and expense incurred by them in their movement, devoted to impressing farmers with the advantages derivable from a combination amongst themselves for the purpose of acquiring better results by practical steps being taken for English flour to be submitted for sale to the public in the forms that they require it, also by directing general attention to the national advantages and beneficial results obtainable from the preferential consumption of home-grown to imported produce, wherever obtainable upon equal terms, would speedily create confidence and bring about results that would prove satisfactory to producers, and do much to dispel the illusion that we cannot grow wheat at a profit and in sufficient quantities for our requirements.

In any event it would be made evident that the much complained of distress in agriculture is not altogether the outcome of natural causes, but

largely the result of a wanton neglect of opportunities on the part of farmers, who fail to discern the growing necessities that the changes in our social system render both imperative and inevitable. They remain inactive, and stolidly look on, while their competitors in foreign countries avail themselves of the advantages which they neglect.

The aggregate consumption of flour for domestic purposes throughout the country, reaches a remarkably large quantity—the whole of which could be furnished more directly to consumers than at present, by British farmers—if they would take the necessary steps to do so, and thus secure this particular trade.

The effort is not a great or a serious one to make, while the profitable results to be acquired from it are remarkable in extent—this work is not to be accomplished by individual farmers, but by a united movement, in which a large number would amalgamate their wheat—convert it into the most useful and best possible kind of flour, which should be packed in a special and readily known bag with a well-defined and registered trade-mark, so that neither could well be imitated—with this package and flour of useful and fine quality, the movement would speedily take root and establish itself in

such a form that buyers would ask for and insist upon having English flour while it was procurable.

The cost of the bags for packing the flour, is a mere trifle, that for 5 lbs. size being 5s. per gross, or equal to 2s. 6d. for the number required to pack the quantity of best flour yielded by a quarter of wheat.

In this movement farmers would receive marked encouragement from the spirit latent in all classes of our people to prefer everything English, irrespective of cost, if they only have the opportunity; and it may be safely said that if the choice of English flours or foreign flours, were offered to the British public side by side, the English would invariably be accepted in preference to the foreign, just the same as English meat is appreciated on all sides. In fact, with the working classes, the prejudice in favour of English produce is so great, that if shopkeepers were compelled by law to mark their goods English or foreign, as the case might be, it is doubtful whether they could dispose of the latter at any price.

With this advantageous circumstance in their favour, farmers should not delay a day in taking the essential measures for their flour being submitted for sale to the public in its

definite character as English, and at the same time cause all imported flours or flour from imported wheats, as exposed for sale in shops to be so marked in accordance with the Merchandise Marks Act that their true origin, and character should be accurately known.

The advantages to the agricultural interest that would accrue from the successful establishment of this system, can be gathered from what is generally ascribed as attainable under the proposed imposition of a 5s. duty per quarter upon imported wheats or their product.

The results obtainable by the means set out for the disposal of flour is equal to an improved price to the extent of 15s. to 20s. per quarter, so that if the one movement is to remove the prevailing distress in agriculture, the other, without the imposition of any new taxes, would place farmers in affluence and prosperity.

CHAPTER XXI.

Anomaly Seventeen.

WHITE OR WHOLE-MEAL BREAD.

IT is hardly possible to examine into any portion of our system of food supply, without being struck by the remarkable amount of wanton ignorance and thoughtlessness that prevails in connection with its practice ; when by one of those peculiar but inexplicable coincidences that invariably exist but cannot be accounted for, it will be seen that the more general and popular the subject is, the greater is the anomaly existing in connection with it.

More especially will this be found to be the case with bread, the greatest and most extensive article of food that is consumed.

Firstly, there is a fear that we cannot grow sufficient food for ourselves.

Secondly, an opinion that if we were blockaded by an enemy in case of war, there would not be two weeks' supply of food in the country.

Thirdly, that the bread must be absolutely white to meet the wishes of all classes of people.

As to the first, the fears are groundless. If a legitimate demand existed for home-grown wheats on their merits, the area of land formerly occupied in their production would again be utilized in the same direction, but our bakers demand flours from the hard "water-drinking wheats" that reach us from abroad, not because they are better in any way than flours from home-grown wheats, but simply owing to the fact that they will absorb and retain more water, and thereby more loaves of bread can be obtained out of a sack of flour, prices being regulated by the ordinary commercial laws of supply and demand, that for the imported article is unduly raised, while that for home-grown is depressed. If the demand for home-grown wheat was regulated by its merits, its selling value would be relatively higher, and farmers would be induced to grow more when it would be found that we not only could grow nearly sufficient for the consumption of the people; but we at present waste fully one-fourth of what is grown in its preparation for consumption, as in grinding wheat into flour, fully 25 per cent. of the most

nutritive portion is rejected, for the simple reason that the bulk of the people require bread that is white in colour; therefore, to supply this idiotic wish, fully one-fourth of our food supply is wasted, or diverted from its natural purposes, and becomes the food of animals instead of man.

The retention of this fourth of our wheat supply for consumption would materially alter all the positions in connection with our food supply, and also the annual national balance-sheet, inasmuch as the increased value and quantity of the food, would become the property of the producers and consumers, proving an addition to the national larder, and the amount at present sent away to foreign countries, for the quantity of food material not required would remain in hand, and be largely divisible between our working classes in all directions.

We should also learn to utilize what we produce, and render it subservient to our wants; and at the same time it would be found that by bringing more land into cultivation—which the profitable returns to our farmers would lead to—we should acquire an increased primary yield, while the further beneficial use of the 25 per cent., or one-fourth of the whole, would contri-

bute to render us practically independent of foreign sources.

This gratifying result would spring out of any movement, that was successfully made to dispel the miserable delusion that white bread is the best. Its consumption may arise from custom or fashion, but white bread being deficient in taste, flavour, and nutritive properties, is not only not the best, but it is far the most inferior.

These important facts have been fully published in numerous scientific works, but they are not brought within the reach of the general public ; and although the information may be known to a few, yet their requirements are insufficient to cause existing vested interests to change their system of business, especially as it would be for another that would not bring them so much profit.

Wheat flour has frequently been found to be largely adulterated by the addition of foreign substances, those principally employed being potatoes, starch, bean flour, Indian corn flour, rye flour, rice flour, alum, chalk, carbonate of magnesia, silica, clay, bone-dust, and plaster-of-Paris. Some of these substances are also used in making bread ; but the adulterants most frequently used by bakers are rice flour and

mashed potatoes, which in the trade are termed "fruit:" these, with alum and salt, assist in giving the bread its white appearance, and also enables the flour to absorb and retain a large percentage of water.

The great extent to which this operation can be carried on may be gathered from the results of the experiments made some time since by the *Lancet* Commissioners, by whom it was found that a loaf of bread consisting of two pounds of flour, with the requisite water and yeast, weighed 2 lbs. 8½ oz. when taken from the oven, showing that the flour had taken up and retained 8½ oz. of water; another loaf, containing an addition of two scruples of alum and half an ounce of salt, weighed, when taken from the oven, 2 lbs. 10 oz., its weight having increased by 9½ oz., deducting the alum and salt, showing an absorption of about 12 per cent. more water; while a third loaf, which contained the same weight of ingredients, but half a pound of wheat flour being replaced by same quantity of rice flour, was found to weigh when baked 2 lbs. 10½ oz.; thus containing 2 oz., or about 22 per cent., additional water.

To meet this unfair competition of the trade, farmers should combine to aid in supplying the public with pure bread made from home-

grown wheat, at a fixed price, and should also the at same time arrange for the supply knowingly of breads made up of the various water-drinking wheats and other adulterants, when by thus forcibly illustrating the subject and giving the people to understand fully what they were buying, it would not take long to educate the public mind to the subject in any district where the system was practised.

That the consumption of the whole of the wheat is natural is evidenced by the unanimous testimony of the scientific world.

Sir H. Thompson writes :—" Daily bread ought to contain all the constituents of the wheat, instead of being made from flour from which most of the mineral elements have been removed."

DR. B. W. RICHARDSON, F.R.S. :—" Guild of Good Life."—" Many people think that because it is fashionable to eat the whitest bread, therefore the whitest bread is the best for food. There cannot be a greater delusion ; and for a nursing mother to have such a delusion, is indeed unfortunate. White bread contains chiefly the starchy part of the flour ; it contains very little of the gluten which is the flesh-making food of flour, and it contains next to none of the mineral substance which is the *bone-making* portion of food. The coarser, or brown bread, the bread that is made from what is known as whole-meal, is the proper bread."

BARON JUSTUS LIEBIG :—" Nutritive Value of Foods."—" Of all substances used as food for man, corn undergoes

the greatest change in its nutritive value when converted into flour. Wheat and rye corn contain more nutritive salts than meat, but wheaten or rye flour very much less than meat."

PROFESSOR CHURCH, M.A., F.I.C., F.C.S., said :—"In the interior of every grain of wheat there was a large proportion of starch, and but a small proportion of bone-forming matter; and the bone-forming matter, called phosphates, was not a one-half part in every 100 parts of fine flour. Now the mineral matter, including the bone-forming matter in the grain, being nearly 2 parts in every 100 parts, it followed that in making fine flour the miller threw away 75 per cent. of the actual bone-forming substance, and produced so much bran instead. To put this approximate calculation more clearly, in 100 lbs. of fine flour they only had $\frac{1}{2}$ lb. of bone-forming matter, whereas in whole-meal properly made they would have 2 lbs. of bone-forming matter."

DR. BRINTON :—"Brownish bread of simple wheat-meal, with even an admixture of a fourth or a fifth of rye, would for equal-money value give the labouring populations a food incomparably more abundant and nutritious than that which they now make use of as pure white bread."

DR. F. W. PAVY, F.R.S. :—"The Dietetics of Bread."—"I say unhesitatingly that bread made from the whole grain requires less of these higher-priced articles of food, such as meat and cheese, to be conjoined with it, than bread that is made from white flour. A saving of money expenditure may be thereby effected. Bread derived from the whole grain is more satisfying. . . . It acts as a greater stimulant to the digestive organs. Digestion means the preparation of the food for absorption. We want the food we eat to pass into the blood, in order that it may circulate through the body, and for this purpose it must be absorbed."

With these definite and authoritative opinions, it cannot be doubted that the practice into

which we have drifted of discarding one-fourth of our wheat supply altogether, and destroying the food value of the remaining three-fourths, is a most anomalous proceeding, with which the public cannot too speedily be made acquainted ; and while the information is being spread, the opportunity should be taken practically to furnish the working classes with the proper bread that it is advisable they should take, and which would be most beneficial to them.

It should be borne in mind that the British workman is gifted with a large amount of common sense, and is quick to discern any matter that is productive of benefit to himself ; and, on this ground alone, he would seize with avidity the opportunity to supply himself and family with this whole meal or wheat meal bread, if it were readily obtainable.

But it must also be borne in mind that the working class consumer has no means of supplying himself, nor time or opportunity to go out of his way to procure his bread. It must, therefore, rest with landowners and farmers to combine to supply the people with what they require ; this they may easily do, each in their own district, with benefit to themselves and the nation.

CHAPTER XXII.

Anomaly Eighteen.

CHEESE-MAKING.

THE manufacture of cheese as a branch of agricultural industry, exhibits at a glance the characteristic traits of the indolence of the British farmer's mind, and the thoughtlessness which governs his actions.

It presents the remarkable and inexcusable anomaly by which milk of a fairly uniform character, is converted into cheese of an extremely variable quality and widely different value.

The reports from the various cheese fairs held in different counties, at all times furnish ample evidence of this peculiar variableness.

For the current season reports from Nantwich, in Cheshire, show that 110 lots, representing 60 tons, were pitched; the prices being for good Cheshire, 50s. to 60s.; medium ditto, 40s. to 50s.; common ditto, 5s. to 40s. per cwt.

From Preston, in Lancashire, for July, it is reported that there were 126 lots of cheese

pitched, consisting of 2174 cheeses, the prices being—best, 55s. to 62s. 6d.; seconds, 45s. to 50s.; thirds, 40s. to 43s. per cwt.; or taking both markets, the average in round figures was $5\frac{1}{2}d.$ to $6\frac{1}{2}d.$ per pound for best quality, $4\frac{1}{4}d.$ to $5\frac{1}{2}d.$ for second quality, and from $\frac{1}{2}d.$ up to 4d. per pound for third or common quality Cheshire cheese.

Three points present themselves for consideration in this extraordinary cheese business that render it inexplicable, the first being the marked difference in the value of cheese brought to market.

That farmers with the same material should so manipulate it as to turn out products of such a wide difference, in quality and value is beyond ordinary comprehension.

In the aggregate these differences in values must reach an enormous sum, and while the exact amount cannot be ascertained, it may be estimated from the fact that the range in values are fully twenty shillings per cwt., which upon the 135,500 tons of cheese, the quantity the annual product reaches, shows that our dairy farmers by their want of care and precision in the make of their cheese, which requires the same amount of milk and labour whether the turn out is good, indifferent, or bad, deprive

themselves of at least one million and a half sterling—a loss that is a definite diminution of their profits.

The second point is, by whom is the difference in price absorbed between what the farmers receive and the purchasers pay? That this in the aggregate must reach a very large amount is evident from the wholesale rates referred to, and the prices paid for English cheese by consumers when they can obtain it.

In his estimate of the annual farm produce of the kingdom, the late Mr. James Howard calculates the cheese production at 135,500 tons, valued at $5\frac{1}{2}d.$ per pound. Omitting choice dairies and the few factories, whose makes go to establish top prices, this is evidently a higher rate than the average prices received by the ordinary dairy farmer, and at the same time, remarkably short of what the public pay for English cheese. One halfpenny to a penny per pound, or about one million sterling, may be well taken off the estimate of the amount taken as received by the farmer, while $9d.$ per pound, or $84l.$ per ton is a low price to average as what consumers, have paid for the cheese they have purchased as English, being a total sum of 11,382,000*l.*, or a profit of 4,526,334*l.*, that the British farmer allows the middleman for

having his cheese sold for him to the public, in addition to the one million and a-half sterling that he deprives himself of, by not producing an article of an even and equal quality, with a known and easily recognized brand, the same as his Canadian competitor.

In the third case, where the English cheese is sold is a mystery. Stiltons may be obtained in London, in some places, but then there is no assurance that they are of home-made production.

But as to other makes of cheese, neither in London nor any of the large towns are they readily procurable, while the provision markets reports, as published in the various organs of the trade, and the announcements of the principal provision merchants of London, Liverpool, Bristol, Glasgow, and other large towns, quote the values and current rates for Canadian, American New Zealand, and Continental cheeses, but make little or no reference to those of English production. In many cases even the makes of special Canadian factories will be quoted, and the prices at which their produce is being disposed of publicly known. This places the Canadian producer, in a more favourable position than the English farmer, for the former can see at a glance, from the other side of the

Atlantic, the current prices, at which his goods are disposed of in this market, and knowing to a hair's breadth all the costs, charges, and expenses incidental to transit and realization, he cannot be deprived of any portion of the amount realized without knowing it.

While the English dairy farmer must either take his cheese to the local market or fair, and sell it himself, or send it away to a factor or salesman to be sold for him, in which case he must accept whatever sum is sent to him and be satisfied, as he has no means of knowing from public sources the exact current prices of the day, neither has he any standard grade by which he can arrive at the quality of his own cheese.

As a matter of fact, the Canadian benefits by the practice of a natural commercial law not recognized by the English farmer, he prepares his produce in one uniform manner, and specially designates it, that it may go before the public on its merits, and he further packs it in a style that renders it easily transmissible. He thus secures the advantage that the spread of information of market quotations, to the public gives to his produce, while buyers in all parts of the kingdom knowing exactly what is being offered, together with

the current rates that are ruling for it, can with reliance send for what they require.

The Canadian, although away from the spot, thus secures the custom of the buyers throughout the country for his cheese, while our stolid home-producer, as the result of his individual effort, is driven to dispose of his own goods, and must take them to his neighbouring local market or fair, where the outlet is limited to those buyers who choose to attend.

That the advantages arising out of this course are immeasurably in favour of the Canadian producer is evident, as he, with little trouble and expense, commands the buyers of the United Kingdom, while the home-producer, with much trouble and labour, confines himself to those of a small locality.

The successful result of the common-sense course of procedure adopted by the dairymen of Canada may be well understood by the wide development that it has reached; the extent of this may be gathered from a statement made by Professor Robertson, of the Agricultural College, Guelph, at the last meeting of the Eastern Dairymen's Association, that in the province of Ontario alone there were 770 co-operative cheese factories, supported by 41,000 dairy farmers who supplied the milk of 260,000

cows, being more than one-third of all the milch cows in Ontario. Besides these cheese factories there are a large number of creameries in which butter only is made. Both British and Irish farmers should require no greater inducement than this example to become alive to the benefits yielded by combination properly worked.

Even in the cases where our dairy farmers have combined and established factories, and produced a fairly uniform article on a large scale, they have not taken the necessary steps to make the public acquainted with their movements, but have confined themselves to the disposal of their cheese through the ancient and insufficient agencies of factors, fairs, &c., thereby only partially benefiting by their operation.

It will thus be seen that the inert character of the British farmer is charmingly illustrated by those members of the class engaged in dairy farming and cheese production. They not only take no practical steps to place their own commodities before the public, but allow foreign competitors, by the practice of an inexpensive but better system of preparation and distribution to enter their own home markets and successfully compete with them.

But their inactivity is not solely confined to

this point, for in addition they suffer all sorts of imported adulterated abominations freely to enter into competition with them, as may be seen by the quantity of "bull cheese," "enriched cheese," "filled cheese," "skimmed cheese," "lard cheese," "cheesine," and other imitations of the real article that have been imported from America. These have gone into consumption during the last few years to an enormous extent.

The sale of these compounds is clearly an offence within the scope of the Adulteration Act. To stand idly by and grumble at everything in general, is a characteristic feature of the British farmer, when a few prosecutions would soon stop the sale of these foul importations, and thus furnish an ample protection to that branch of agriculture devoted to cheese production, from the competition of such filthy abominations; but these steps, simple as they are, have not been taken as they should be by those affected, who still continue to occupy themselves by complaining of a distress that they help to create by their inattention.

The operations by which these articles are produced in the United States are tersely described by their own officials, in the reports

they furnish to their own Agricultural Department, wherein it is stated :—

“ They use the separator on the milk and whirl out the cream, then with a machine, called the Mosher machine, they whirl in a quantity of grease to replace the abstracted cream in the article they call cheese.”

This manufactured stuff is not allowed to be sold in America, where it is produced.

Thus farmers, who at all times clamour for protection which they are not likely to obtain, may, however, readily protect themselves and stop the importation of these, and many other adulterated articles, that illegitimately compete with their produce. This is a work simple in character and readily available for prompt use, inasmuch as any one of the numerous agricultural organizations, could effectually move in the matter, by instructing the local health and police authorities to take action, while they in an official capacity undertook the prosecutions.

By thus stopping the sale of all adulterated foods — farmers will destroy the illegitimate competition which they suffer from ; that of a legitimate character they must encounter by the practice of energy, industry, and common sense.

CHAPTER XXIII.

Anomaly Nineteen.

HOME-MADE BUTTERS.

LET it be noted far and wide, that throughout the United Kingdom of Great Britain and Ireland, there exists but one market where the largely produced article of daily consumption, butter, is collected, authoritatively examined by independent experts, classed or graded, according to its quality, branded, and its current value officially determined and published. That place is the city of Cork, in the south of Ireland; the beneficial result attending this systematic collection, classification, and notification of prices being visible in the establishment of a regular and permanent trade, in the article from that market at a recognized value, in all towns of the kingdom.

In all other parts of the country the prices of butter are determined between sellers and buyers upon no definite basis other than those furnished by local conditions, and these are

governed in a few leading towns by the prices at which imported fresh butters are being sold.

Under these peculiar circumstances it is, therefore, not possible accurately to determine the full extent of the losses that dairy farmers inflict on themselves by neglect and inattention ; but opinions may be formed of the enormous national loss annually sustained unnecessarily, in this branch of agricultural industry, by a reference to the courses of procedure in connection with the article in the various districts throughout the kingdom.

That there are some producers of very high-class butter, in most parts of the country is evident from the exhibits that have been seen for many years past at many of the local agricultural shows, and exhibitions ; but these do little more than practically demonstrate, what our dairy farmers generally might successfully accomplish, if they followed the footsteps and adopted the same course of procedure, as that practised by those who exhibited the results of their industry. That the total home production of really good fresh butter for consumption, forms but an infinitesimal portion of the actual quantity made, is evident from the general inability to procure a supply of the article of reasonably fair quality, in any except a few isolated districts,

such as in some of the principal provision establishments, at the West-End of London, or at depôts of the various dairy companies, that have recently come into existence, where good home-made butter may, without doubt, be procured; but throughout the agricultural, manufacturing, or mining districts, the generality of home-made butters procurable for consumption do not equal in quality, condition, or value the imported mixtures that, as "Normandy First," "Brittany Fresh," "Margarine," and other fancy designations, largely enter into consumption.

Therefore, it may be safely assumed that the prices which dairy farmers usually obtain for their butters, are much lower than those which they might secure, under a more favourable system of realization. This system they could inexpensively adopt, practise, and carry out.

The trade usages followed at the Cork butter market, furnish the material for forming a basis on which opinions and estimates, on this head may be built up. There the classifications for quality, &c., are four in number for ordinary salted, and three for mild cured; the relative current quotations on the same day being: for salted firsts, 85s.; seconds, 80s.; thirds, 78s. fourths, 72s. Mild cured: superfine, 95s.; fine, 89s.;

mild, 79s. From these ascertained variations in qualities, and values at a long-established recognized centre of a district, where butter-making is largely carried on, it may be assumed that although all farmers make an effort to reach a high standard, they do not succeed: from these ranges of prices, coupled with the fact that high-class butters are comparatively invisible in England, it is evident that the quantity of good milk converted into inferior butter by our dairy farmers must be exceedingly large.

The nature and extent of this trade is not ascertainable, there being no established graded quotations for British butters in the three kingdoms. Everywhere buyers and sellers, take their chance, values being governed by local and personal circumstances, without any definite standard to guide an operation in most districts, while in the few very large towns, prices are influenced by the ruling values of imported goods.

These varying prices are a direct loss to the country generally, and to the farmers particularly, inasmuch as the milk which furnished the low and inferior quality butter would, by care and attention, with the same labour and at no greater cost, have produced butter of the very best quality, and of the highest value.

To produce the finest quality article, that will command a ready sale at the highest price, requires only cleanliness, care, and experience : three items inexpensive in themselves, and within the reach of all farmers, their wives and dairy-maids, who will give thought and attention to the subject.

The results referred to are readily attainable by combined working ; these bring about a concentration of experience, and allow of the production of an uniform article, that in turn realizes a better price. The difference in the result between combined and individual working is ably shown in a letter addressed to the press some time since by that active and indefatigable worker for Irish farmers, the Rev. Canon Bagot, in which he states :—

I visited Galbally (Co. Tipperary) Dairy Factory last week, and found the day I was there 700 lbs. of Butter churned, for which some forty farmers received an average price of 1s. per lb.

The same day, in Cork Market, there were 1150 firkins and cools, the average price of which was 7d. ; and only eight firkins, out of 1150, realized over 10½d. per lb. What greater argument in favour of Creameries ?

AVERAGE PRICE.						s.	d.
Galbally Creamery	...	...	...	...	...	1	0
Cork Market	...	...	...	...	...	0	6½ ¹

¹ ½d. deducted for price of firkin and commission.

I hope the Munster farmers will take the above figures, and the remedy, into their serious consideration.

Yours, &c.,

RICHARD W. BAGOT.

FONTSTOWN GLEBE, KILDARE,

November 20th.

Taking this average difference of price at 45 per cent., as the basis of the relative difference in values between organized and individual working throughout the kingdom, the aggregate loss reaches a terrific total. In support of this view, that able authority, the late Mr. James Howard, in his estimate of the annual value of farmers' products, returns the butter yield at 95,933 tons, at 1s. per lb., having a total value of 10,744,496 $\frac{1}{2}$ l. Relinquishing the 45 per cent. difference that Canon Bagot found to exist between the prices of the Cork market, and the Tipperary factory, and taking instead only a figure of 25 per cent., that the experience of combined working everywhere, at home and abroad, has shown to be readily attainable, we then see that the difference or depreciation reaches no less than 2,686,124 $\frac{1}{2}$ l., an exceedingly large sum for home butter producers to pay annually, for the privilege of luxuriating in dirt, ignorance, and carelessness.

These are unfavourable conditions, that should not be allowed to continue; it is certainly


to be hoped that the day is not far distant when the duties to the State of those who occupy the lands will be brought under consideration, outside that of ownership pure and simple, and then farmers will be called upon to make themselves acquainted with, and actively and energetically to practise, every means that intelligence and industry makes known as desirable for the production of the largest amount of best quality foods for the nation, including butters, at the least possible expense.

Meanwhile, those who by the exercise of intelligence contribute to the national welfare by the practical introduction of new systems of working that yield increased food supplies of a better quality, should receive State recognition as a reward for their exertions, and for the encouragement of others. This may be effected by the remission of local and imperial rates and taxes to all societies that may be formed for the purpose. This would to some extent form a bonus or bounty for the encouragement of home producers, and is but an extension of the principle by which industrial co-operative societies are released from the payment of income tax.

CHAPTER XXIV.

Anomaly Twenty.

MILK COLLECTION AND DISTRIBUTION.

HE various incidents in connection with the home milk-trade that have been brought under public notice from time to time, have tended to demonstrate the existence of an alarming and anomalous condition of matters, of a most serious nature in connection with this particular industry.

Not only do farmers and dairymen, suffer great financial losses by the methods in which their business is conducted, but the general health of the community is largely infringed upon, owing to the amount of disease that is engendered, principally in the cowsheds of the town-dairies of London, Dublin, and Edinburgh. The reports recently issued by the Departmental Committee on the existence of Pleuro-pneumonia and Tuberculosis in the United Kingdom, and also those by the medical officers of various districts, definitely point out

the prevalence of these diseases, and the means by which they may be overcome.

Whether the remedy they recommend, will be generally acceptable remains to be seen. The Committee in their report refer especially to the cows of town-dairies, and owing to the prevalence of disease in them, they recommend that once a cow enters a shed in a town it should not be allowed to leave it alive; that is to say, that when it has ceased to yield milk, it shall not be allowed to be sent out to graze, that it may reach a condition fit for the butcher, in order that the animal may not have the means, of communicating with and contaminating the healthy cattle of the country with the contagious diseases, from which it is found that these animals invariably suffer.

The tacit admission thus made that unhealthy cows may be permitted to exist, and furnish the people with milk impregnated with the germs of disease, will hardly be appreciated by the people, and it throws a responsibility upon the department charged with protecting the public health, from which they cannot shrink any longer.

The numerous reports of scientific authorities, and medical officers from many directions have conclusively proved that numerous diseases are

largely conveyed and propagated, by means of milk from unhealthy cows.

The same sources of information, also point out a simple means by which this source of transmitting contagion may be neutralized.

Among others, Dr. Power, a medical inspector of the Local Government Board, by the display of an extraordinary amount of skill, patience, and acumen, definitely traced out the sources of an attack of scarlet fever to the milk from some cows at a suburban farm, that had shortly before reached there from Derbyshire.

The reports of Drs. Ballard, Buchanan, Darbyshire, Ernest Hart, Robertson, Wynter Blyth, Corfield, Jacob, and others, extending over twenty years, were referred to and quoted at length by Dr. Klein, in his address at the Royal Institution last year on "The Milk of Diseased Cows as a Source of Scarlet Fever," in which it was conclusively shown that that fatal disease, and also the equally fatal ones, "Diphtheria" and "Typhoid Fever," invariably originated with the milk of cows suffering from disease, and the fact was well established, that those diseases were subsequently communicable directly from person to person.

It would be the height of absurdity, to imagine that a trade carried on under the circumstances

that the animals engaged in it were subject to such terrible visitations, was being conducted in the best, and most profitable manner for themselves, by those engaged in it; and, on that ground alone, the subject is worthy of much careful consideration.

But when the fearful results to the public that arise from it are remembered, there can be no question that in the popular interest, as well as in that of the owner of the animals, steps should be promptly taken, to bring about a better condition of things.

Meanwhile, the full responsibility for the results should be thrown upon those engaged in a business fraught with so much danger to the public interests and welfare. There can be neither sympathy nor consideration for persons who knowingly dispose of the produce of diseased animals for public consumption.

The only reason that can be found for the maintenance of cow-sheds and dairies in the centres of populous towns is the avoidance of the cost of carriage; and, in the interest of public health, the railway authorities should therefore be compelled to carry milk at a rate that would encourage a change in this direction.

It cannot be too widely known that the medical authorities who have directed attention

to this alarming prevalence of disease, at the same time pointed out a simple means by which the risks of attendant contagion may be avoided. In milk boiled, or subjected to a heat of 185° Fahrenheit, any disease-bearing germs it may contain are destroyed, and it may readily be taken with safety; but the public cannot be relied upon to look after itself, and boil its milk before using it; and it would also have to be educated up to the condition of purchasing boiled milk, if it was so prepared for it.

Under these circumstances, the selling of raw milk should be suppressed by law, and every vendor of milk should be compelled to boil it, or cause it to be boiled, prior to its delivery to a customer.

I am quite prepared to find that this suggestion would at the first glance be received by many as a wild one; while the thoughtless might receive it with ridicule; but those who seriously devote attention to it, will discover that while an unlimited amount of good, would arise from the adoption of the course suggested, no very great hardship could be inflicted upon any one. In any event it would indirectly tend to bring into existence a beneficial condition of things for dairy farmers in all parts of the kingdom.

The creation of a general taste for a pro-

duct in a new form is the main difficulty ; but not an insurmountable one, for as a matter of fact the public already partake of boiled milk, to a very great extent, inasmuch as the large quantity of condensed milk annually imported for home consumption, is all subjected to the heating process in the course of its preparation ; and without doubt it is consumed in many directions solely on this account by those who are aware of the existing conditions that attach to the ordinary milk supply.

On this matter we may learn a very valuable lesson from abroad ; for in America a system in connection with milk distribution, on a large scale is successfully carried out, with advantages to producers and consumers, that practically meets the disastrous conditions from which we suffer.

There, in widely-spread, remote country districts, establishments designated "Condenseries" are fitted up with all the appliances necessary for receiving large quantities of milk from the neighbouring farmers, and subjecting it to heat, by means of steam coils in enormous copper tanks, until it is reduced to the consistency of thick cream, or one-fourth of its original bulk ; it is thus capable of ready transmission by railway, the rate for its carriage

being reduced to less than three-fourths of that for ordinary milk, while the extent of plant required for transmission, and also labour in handling, is also largely reduced.

The public readily purchase the plain condensed milk from the companies' carts at 1s. 2d. per quart, as they know all the cows at the farms whence the milk is obtained, are in perfect health; and also that the farms themselves are subject to rigid inspection and supervision in the first instance, and that, in the second place, the process to which the milk has been subjected has been such as would eliminate any undiscovered cause of danger to health, without in any way tampering with the milk.

If properly placed before them in a legitimate manner, the public are by no means slow in discovering the value of a common-sense matter for their own benefit; and it is for our milk producers to combine in their several districts, and place themselves in a position to create and supply a demand in this direction.

Failing that, it is for the sanitary authorities to take steps to bring laws into operation, that will result in the compulsory introduction and carrying out of such a system of milk distribution on public grounds.

The following descriptive account of an American Condensery, from the *Morning Post*, will be read with interest :—

AN AMERICAN CONDENSERY.

A large number of new names have been given in dairying during the past few years, and these have not been confined entirely to minor operations or machinery, but embrace the whole operations of large manufactures. The farm dairy has for some time been supplemented by the larger factory (where cheese is made), and the creamery (where butter is made). The latest addition is the Dairy Condensery, or factory, in which condensed milk is prepared. There are now several of these in America, and a description has been recently given of one of a group of four established in Orange County by Mr. Bawden, and situated at Wallkill. This place is a small settlement on the river and railroad of that name, twenty-six miles south of Kingston, and three north of Walden. It was formerly known as the Basix, the wall-like banks of the Kill here receding into a beautiful open valley. The Condensery, which, with its tall chimney, forms a striking landmark, stands on the east bank of the Kill, near the river road. It is over 500 feet in length, and built of brick, in a substantial and elegant manner, and a pretty office stands in the front. The milk is delivered every morning at the north end of the main building, where each canful is tested with lactometer and cream gauge, and then emptied through a strainer into a large receiving vat. The cans are taken by men, who rinse them in vats of hot water, scald the in-

teriors with jets of steam, and pass them through a west door, where the farmer is in waiting. In the boiling-room is a row of great open copper kettles, bright and shining, in which the milk is boiled. One half of the floor (which is of iron) is covered with tanks, in which the milk is cooled after the condensing process is finished. After being sufficiently treated in the boilers, the milk is drawn up into the second story, and enters the "condensers," where it is exposed to the heat of steam coils in a vacuum. The machinery and fittings of this room are of the finest finish—not surpassed even by an ocean steamer. Mounting on an iron staircase, one may look through the "eye-hole" of one of the great copper globes, and see the milk heaving and foaming in wild confusion. Its watery elements ascend in vapour to a horizontal chamber, where the actual "condensing" is done by letting in a jet of cold water. The milk, now of the consistency of thick cream, is drawn back by pipes to the room below, where forty quart cans are filled and set in the water tanks, on revolving bottoms. Each tank holds thirty-six cans, and each cross-row has a spring connection, which holds in place the copper paddle in each case. Steam-shaft connection is now made, and the cans begin to revolve in the water, the milk thus being stirred and cooled. Great blocks of ice are slid along the floor, broken by sledges, and the pieces shovelled into the tanks until every can is surrounded. This is the process of making the "plain milk," which is shipped to New York in the large cans, and sold from milk carts. The milk for trade and export is prepared with sugar, and put up in pound cans, but from some as yet unknown cause, the milk of this factory thus

prepared does not keep in warm climates, and its preparation has been discontinued. The southern half of the building contains the rooms where the small cans are made, filled, and sealed ; and beyond are the boxing and shipping rooms. A comparatively small number of men are required for the labour of the condensing process, and the day's work is ended at noon. Every part of the work is conducted with the utmost cleanliness, and the copper boilers and condensers are washed, wiped, and sand-papered each day. In the centre of the building are the engines which drive the machinery, and at the north end are the seven boilers which furnish the power. About 17,000 quarts of milk were then being handled, but the capacity of the factory is 60,000. The farmer is paid from 3*d.* to 6*d.* per gallon, the rate varying with the season. Twice a year a schedule of prices is arranged for the next six months. The proportion of condensed milk to uncondensed is one to four, and the former is retailed from the company's waggons in New York at 1*s.* 2*d.* per quart. A rigid supervision is exercised over the farmer. His cows, buildings, yards, &c., are inspected from time to time, and he is not allowed to feed brewers' grains, sprouts, or ensilage. Clean pasture and the best of hay and corn fodder are the principal food. The milk must be thoroughly cooled before being sent to the condensery, and each farmer has a spring house for setting the cans in cool, running water. No work is done at the condensery on Sunday. The Saturday night's milk is received the same evening, and the Sunday morning's milk is kept at home and made into butter. The accounts for one farmer supplying milk showed that during August he delivered at the con-

densery 6000 quarts from twenty cows, and also retained nearly 1000 quarts at home. This was an average of twelve quarts per day per cow delivered, which was far above the average, as the average for all the farms was seven and a half quarts per day per cow.

CHAPTER XXV.

Anomaly Twenty-one.

WASTING OUR OWN FRUIT AND PURCHASING FOREIGN.

TAKING fruit farming as a branch of agriculture for special consideration, upon looking at the actual results obtained (so far as they can be ascertained) by home and foreign fruit-farmers respectively, they exhibit a most alarming difference to the detriment of the home farmers.

The estimated yield derivable per acre, is not so accurately obtainable for orchard produce as for wheat, potatoes, hay, &c., which are cultivated on a large scale, and their gross yield weighed, thus furnishing the data by which the actual crop is known; but taking the estimate of experts on this side, and the actual known and published data that have been obtained in America and Canada, a basis is obtained for arriving at a fair conclusion.

In an estimate of the annual value of our crops recently made by the late James Howard, Esq.,

whose ability to perform the task will be freely admitted, and whose published statement remains unquestioned, it will be found that he placed the value of orchard produce at 20% per acre, which on the 200,248 acres in cultivation throughout Great Britain makes the total value of the crop 4,005,680% sterling. Looking to the known revenues derived from fruit cultivation in America, it will be found to range from 200 to 300 dollars, or from 40% to 60% per acre, while in Canada it was authoritatively stated at a recent annual meeting of the Nova Scotia Fruit Growers' Association, in a paper read by Dr. Henry Chipman, that the known cash returns obtainable for the yield were 300 dollars, or 60% per acre for apple crops, and 664 and 648 dollars per acre for gooseberries and currants, in 1886 and 1887, being 135% and 124% per acre respectively.

In accordance with these returns, our home fruit-farmers, had they pursued the same course, should have realized the additional sum of at least eight to ten million pounds sterling for the produce of the 200,284 acres of fruit-lands they have under cultivation as orchards.

This it will be admitted is an enormous amount, and as that sum or any portion of it would have been extra profit, it is sufficiently

serious to command the most earnest attention, of all engaged in the particular branch of agricultural industry.

In considering the difference in results, the means by which it is brought about, naturally come under notice, and this calls attention to the commercial operations attending realization, when the closer these are scanned the more evident it is, that the difference in a great measure arises from the varied course of procedure.

The fruit-farmer occupies a position quite different from that of other agriculturists, and is relieved from the consideration of many matters to which they have to devote serious attention. Once his orchard is in full bearing his crops come naturally with the season at a comparatively small outlay. The quantity of available produce may vary with the current climatic changes of the period, and the growth may be a large or small one, but the fruit remains of the same nature and particular character in all time, with the tendency to an increased yield each succeeding year as the trees or bushes acquire age, and their bearing capacity extends.

Therefore the exertions of the orchardist, are confined mainly to the simple operations of gathering and disposing, of the bounty with

which nature favours him. This should prove a task wherein the concentration of thought and practice operate advantageously, but, as a matter of fact, no attention is paid to the means by which the supply of fruits, can be most beneficially distributed in the interest of both producers and consumers. Yet in no country in the world do fruit-growers, possess the great advantages of those in England who are within easy reach of the great centres of consumption of the United Kingdom, and a few hours will bring them into connection with nearly forty millions of consumers, and with all those parts of the country where little or no fruit is grown, but where large populations reside and much fruit would be consumed if it were readily available as an article of luxury or food, in any of the numerous forms that are mentioned hereafter.

With this enormous mass of consumers at hand, coupled with the growing tendency to extend the consumption of fruit as food, by an exceedingly large class of the community, together with its known valuable nutritive properties and agreeable characteristics, there is every reason to believe that the exercise of ordinary care on the part of fruit-growers, would bring ample recompense, and that the

industry as a whole should prove most beneficial and lucrative to those engaged in it.

Why this has not hitherto been the case, is readily explained by following the course, that has been pursued by home fruit-farmers, and comparing it with that followed by their compeers of other countries. For this purpose let the operation of one particular district be followed as an example of the whole, and the general movement in Kent to convert hop-grounds into orchards renders that a promising point from which to consider the subject.

As the growers of that county occupy a better position than those of several other districts, and are supposed to have derived the largest profits, the comparison will show how the results from the best have been poor and might be largely improved.

The inquirer into the matter is at the outset met by many encouraging features. The prolific and natural characteristics of the county have caused Kent to be called "The Garden of England." Its favourable geographical position near London, and the surrounding circumstances lend themselves to furnish advantages to its farmers for the disposal of their produce which no other county in the kingdom possesses. Its boundary not only

approaches the metropolis, but actually embodies a considerable portion of the millions of inhabitants that constitute its population; externally and internally it possesses, a large amount of sea and river frontages, that facilitate water communication to all parts of the kingdom, while for not a small portion of the year large numbers of people resort to its seaside towns to pass their annual holiday, and thus might become on the spot consumers of fruits and other produce to the full extent of their requirements.

But notwithstanding the favouring condition that Kentish farmers enjoy of ready access to most centres of consumption, their complaints as to the unprofitable returns they receive for their fruits and other produce are general.

To an outside observer the causes of this deplorable condition of things is quite transparent, and upon inquiry by those interested they will be found to be readily traceable to one single circumstance, and to be due solely to the exclusive manner in which the farmers themselves conduct the operations connected with the sale and distribution of their produce.

If to know a disease is to be well advanced on the way to its cure, then the farmers of Kent may find consolation in the fact pointed out, and so

soon as they realize and act upon the value of mutual combination, they will acquire a full remedy for the many difficulties under which they carry on their different operations.

Combination amongst farmers is largely practised abroad, and invariably leads to good results for those engaged in it, and it is capable of yielding more beneficial advantages to the fruit-farmers than to any other of the branches of cultivation connected with agricultural industry, inasmuch as with care and tact it may tend to double, treble, and in some instances quadruple the amount receivable for portions of their crops, without in any way adding to the cost of production, and certainly not materially affecting those of preparation.

It is interesting to follow the course that fruit-farmers of other countries, would pursue if they occupied Kentish lands for cultivation, and had to deal with and realize the products. The Canadians would forthwith concentrate their efforts and establish a central association for their mutual advancement with other local organizations in every district, the members of which would meet and exchange notes, experiences, and opinions; the Central Society would hold quarterly conventions of delegates from each of the district societies

of the province, who would disseminate their experiences, views, and conclusions, and do their utmost to spread all the most interesting information connected with their particular industry, in the most practical and effective manner possible. So far from being exclusive and isolated, as our farmers are, the greatest pleasure of those attending the conferences would be derived from the largest and most personal amount of information they each could furnish. This being duly recorded, printed and published in their societies' transactions, would be distributed far and wide for the benefit of their own members and other colonists.

After supplying their local markets and making shipments of some of their apples and other fruits, the Canadians would, by means of a drying-stove, or hot-air chamber, extract the moisture from the remainder of their crop, thus putting it into a condition by which it would keep, could be easily packed, economically transported, greatly improved in value, and speedily sold.

The Americans, if transferred to Kent would follow much the same course, but would not be content simply to dry or evaporate their fruit crop, but would deal with it in a number of

ways. They would dry some portions in the sun ; other portions they would preserve in tins which they call "canning," some of the fruits would be put up in their own juice for cooking purposes, and some in syrups for dessert use ; portions would be made into a preserve, which they term "fruit butters," while considerable quantities would be sent into a cold store, so as not to overload the markets with green fruit, during the middle of the season when everything is cheap.

The various outlets and markets, in the locality and at a distance would be gradually supplied, and what is sent for sale would be carefully sorted into qualities and sizes, and packed into small boxes, baskets, or crates, by which the fruits are readily and safely transmissible by refrigerator cars or portable cool chambers, from the fields of the South and West to the markets of the North and East.

Americans, if in Kent, would make short work of the railway difficulty from which Kentish farmers now suffer. Before a day was over they would promptly meet as a body, and grasping the situation afforded by the Medway and Thames, would deal with it in a straight-away fashion, and in less time than it would take an English farmer to get up a good

grumble, the Yankees would combine, establish, and be running a water communication by means of punts, barges, boats, and other vessels, into all the accessible spots that could be reached by sea, river, or canal, where a basket of fruit or other goods could be shipped or landed near to consumers. The contest, fixed and determined, would last until the railway authorities understood the position and made reasonable terms.

The Frenchman, if in Kent, would act quite differently ; he would make up as much fruit as he could into dainty little boxes or baskets, packed as tastefully and carefully as if they were wax flowers, marvellously matched in size, colour, and character, so as to tempt their purchase, and by their luscious appearance give pleasure to the consumer, while large quantities would be preserved by being boiled in sugar and converted into crystallized dessert fruits of various kinds, that meet with a ready sale at high prices.

The Italians and Portuguese would preserve their surplus crops by converting the bulk into fruit pulps, that they might be used at a later season for domestic or manufacturing purposes, that could be easily and cheaply transported and sold at any time, and by preserving and

tinning large quantities as high-class dessert fruits.

While the Spaniards, Turks, Bosnians, Greeks, Cypriots, and Algerians, would dry their crops the same as they now do the immense supplies of plums, figs, &c., that they at present cultivate in their respective countries. In fact, transplant practical fruit-growers from any part of the world into Kent, and all would do something, that would tend to give an extended market, and consequently a better value, to the bountiful gifts with which nature endows this delightfully charming county. The general and unanimous impressions that would be felt would elicit expressions on all sides, and in all languages, at the careless, utterly wanton, and the only course pursued by Kentish farmers, in recklessly packing their choice soft fruits into the enormous sieves they now do, and sending them anywhere, anyhow, to be disposed of at any price; and it would not tend to raise Kentish farmers in their own estimation, did they hear and understand the remarks that their course of procedure gave rise to.

During my visits to Kent I have been deeply impressed with the fact that the kilns and oast-houses, that abound in every direction lie dor-

mant and unutilized, except for two or three weeks during the hop season. The capital they represent in the aggregate reaches an enormous sum, and it appeared a most remarkable anomaly to me, that while the facilities for drying hops existed, fruits that were mechanically dried abroad, were allowed to waste and rot with ourselves ; it was evident to my mind that it required but a small concentration of effort to successfully utilize the hop-kilns for the purpose.

The attention that has been given to artificial drying is evidenced by the very large number of patents that have been taken out during the past few years for drying apparatus of every description. Many of these depend mainly on the application of heat, and in others more or less movement of air through the apparatus is provided for by various mechanical expedients.

As in other branches of industry, comparatively few of these patents have stood the test of practice, and as farmers cannot afford to experiment or make mistakes, their best course is to profit by the experience of other trades, and ascertain what is already most widely and successfully used by them for drying purposes, that may be suitable also for drying vegetable products, which from their bulk and moisture

compared with their value, call for a minimum expenditure of labour on them, if they are to be dried successfully upon a commercial basis.

From the many appliances and their practical application that came under my notice nothing appeared so efficient as the Blackman system, which is based on the principle that the rate of drying depends on the *quantity* and the *dryness* of the air brought into contact with the material, and in practice almost entirely on the former, *quantity* being a much cheaper element than *dryness*.

Mr. A. C. Wilkins, of Tiptree Heath, near Kelvedon, Essex, tested a small Blackman apparatus for fruits, and in forwarding some of the fruit on June 15th, 1888, wrote: "So far as drying goes, the machine answers admirably; these have been dried in one and a half hour only."

H. N. Roberts, Esq., of Ivinghoe, Tring, Herts, who has taken great interest in drying plums for several years, and who had a small Blackman Fan, under date of November 15th, 1888, wrote: "Have dried some few plums. Undoubtedly the idea is right enough, but the same amount of fire with the same fan will dry four times the amount. I may mention that I turned some unsaleable fruit into really very useful and nice stuff."

Strange as it may appear at a first glance, it will nevertheless be found to be true that the courses pursued by all fruit-farmers abroad could in most instances be readily, profitably, and more advantageously, carried on by fruit-farmers at home in their own counties, than by the foreigners in their respective countries.

It will thus be seen from these statements, that the various methods advantageously in daily use in all directions abroad, could be more effectively and beneficially carried out by home fruit-farmers on their own grounds ; the facts should be adequately recognized, and borne in mind by all home fruit-producers that they not only have an immense mass of consumers within easy reach, but that they also have a powerful concentration of cultivation of produce, that is everywhere expensive and risky to move about, and that their comparatively small and closely packed farms, furnish advantages for the concentration of labour and the consequent saving of expenses, that the American and Colonial fruit-farmers do not generally possess, with their isolated farms, sometimes as large as parishes, and often as wide apart as counties.

CHAPTER XXVI.

Anomaly Twenty-two.

INDUSTRIAL CO-OPERATION.

WHILE all friends of social progress cannot but rejoice at the establishment and marvellous development of the system of industrial "co-operation in distribution" that has taken place during the past forty-five years, they must feel a bitter pang of regret at the extreme thoughtless or selfish trait that has been made apparent in the character of those who control the movement, the manner of which is so thoroughly opposed to the spirit in which it was conceived, and even at the present time is propagated—that no one gifted with the least particle of true co-operative spirit can excuse or condone it. In theory every feature of industrial co-operation should be directed towards the elevation of labour and placing it on a level with capital; in practice the co-operator as a capitalist exhibits and carries into operation all of the strongly to be condemned artifices of the

sweating system, the very essence of which is to extort the labour of the producer from him for an inadequate consideration.

To buy in the cheapest market may be "free trade," but to waive all consideration for the home producer in whatever direction he may labour, and to give preference to the foreign producer where all things are equal, is a short-sighted practice which in principle is neither sound, honest, nor judicious.

The future historian will dwell with astonishment, upon the most marked and divergent characteristics that the principles and practice of co-operation in the present age have displayed.

By the returns published for the year 1887, it appears that the co-operative movement had attained the dimensions of 1432 societies, numbering 945,619 members, possessing an invested capital of 12,146,938 \pounds ., while the purchases of their customers for the year amounted to the enormously large aggregate sum of 34,189,715 \pounds .. The large figures clearly exhibit the extent to which thrifty habits are practised amongst the working classes, and show that they have reached a point of concerted effort, which few who do not watch the development of social movements would give them credit for.

These interesting and highly gratifying facts, however, cannot be too widely known, together with the knowledge that the figures are confined to those of industrial societies pure and simple, and do not include such middle-class organizations as the Army and Navy, and Civil Service societies, which are in a great measure limited companies brought into existence for the beneficial interest of a few financial promoters, and maintained for the advantage of those who control them, as beyond the benefit of self-satisfaction they confer upon their customers, the remaining advantages it is difficult to see, as in most cases the supposed excessive cheapness, is a complete illusion, there being numbers of large private establishments in the metropolis where business is conducted on Store principles, at Store prices, to which customers can resort at any time, and are not required to become shareholders or ticket-holders, or in any other way to subject themselves to restraint, and to aid in the provision of capital for the conduct of the business.

That the working classes should have been able to accumulate a capital exceeding twelve million pounds sterling, and hold the same at their own disposal, is a marvellous fact, illustrating their social progress; but with this

large sum invested and at their disposal, it appears strange that their gross purchases for the year from their own societies should only reach 34,189,715/., being under three turnovers of capital. Considering that they had their daily requirements to provide for, with their weekly wages to pay for them, and that three-fourths of the purchases were for provisions—the proportions are quite inadequate.

This shows that the extent to which capital can be beneficially utilized in the promotion of the measures incidental to “co-operative distribution” must at an early date form a subject for the earnest consideration of co-operative workers, for in comparing the present large investment with the purchases for the year, their disproportionate character, clearly points out that the limit of the legitimate employment of capital in this direction has, been approached even if it has not been reached and passed.

It is, therefore, an open question for the members to consider whether the movement should not be extended by transferring some of the capital thus accumulated to measures for the development of “co-operative production” on such a basis as will enable labour to rank with capital upon mutual and equitable terms.

It must, however, be confessed that the in-

dustrial classes as capitalists, do not exhibit in themselves that consideration for the rights of labour that they have at all times contended is due to it, and the anomalous condition to which industrial "co-operative production" has reached is painfully demonstrated at all the congresses, and delegate meetings that are held of the leaders of the organizations, when the subject of the share of labour in co-operation is brought under consideration. This is invariably supported by those who are out of office and management, and have no responsibility only to be resisted by those who holding the reins of management are in power, and held responsible for the supply of everything, at the lowest possible price, without consideration for the interest of the producer. This apparent want of the due appreciation of labour's rights by a numerous section of those who control and direct the movement, demonstrates most emphatically that the co-operator as a capitalist relinquishes all thoughts of the ideal rights and duties of and to labour in practice, and, like every other capitalist, thinks only of what is commercially due to it. Sooner or later this feature will reach a stage when it will become so painfully apparent as to bring the movement and those conducting it into collision with all who

watch and take an interest in the social welfare and progress of the industrial classes.

There appears to be an utter want of consideration for their colleagues who labour, or of the directions in which they might aid and assist in the development of our national industrial resources, by a large number of members in the different local societies—who by their delegates at the sectional meetings and congresses do not fail to urge courses of procedure in directions and with objects that their conduct cannot be too strongly denounced. But for the facts remaining upon the historical records of their proceedings which were openly published, it would be scarcely credible that at a meeting of delegates last year a resolution was fully considered and approved to provide 500*l.* to be applied to the formation and fitting up of a cheese factory in America.

The anomaly of a section of the working men of this country, deliberately proposing to appropriate a portion of their accumulated capital towards the establishment of a cheese factory in a foreign country, while our own dairy industry was so largely in the need of help and encouragement, and were applying to the Government for pecuniary aid, was considered so singular that it elicited a considerable amount

of unfavourable comment, and the subject was subsequently brought forward for reconsideration at another meeting, when as a compromise it was determined to alter the proposed arrangement, and to establish the cheese factory in Canada instead of America.

Therefore there remains in existence the undeniable fact that, in face of the distress existing with our great national agricultural industry, such a proposition should be proposed and approved even in its modified form—this unmistakably demonstrates that the working-man as a capitalist considers only his own personal interest, and is utterly unmindful of what is due to the position of his working-class neighbour who has but his labour to dispose of.

But the incident referred to is but an insignificant matter to the actual course pursued by the leading organizations of the movement, which are the Wholesale Co-operative Societies, whose head establishments for England are in Manchester, with large branches in London, Newcastle, and elsewhere, and for Scotland at Glasgow. The operations of these societies consist in buying the goods required for the local societies that have been brought into existence in all parts of the United Kingdom. The sales of the English Society alone last

year reached nearly six millions sterling, about three-fourths of which were for provisions.

This society has its buyers in Denmark, Germany, Austria, France, Holland, America, and other countries, who purchase and ship large quantities of farm produce. The extent of these may be seen from their published returns, which for the quarter ending March 24th were 318,538*l.*, for the quarter ending June 23rd, 360,369*l.*, and for the quarter ending September 22nd, 1888, 463,616*l.*, making 1,092,423*l.* for the nine months, or an estimated average of foreign farm produce for the year of 1,456,564*l.*

Of this amount, 1442*l.* was for dried fruit juice and drapery. Sugar and leather are included in the items, but the amounts for them are not separately given. The greater portion of this large sum has been expended in farm produce, that with some little expenditure of thought and trouble could have been procured from our own farmers. Viewing this course of procedure as a whole, it is not possible to conceive a more wanton or thoughtless one.

The accounts in connection with these transactions have recently been published for the first time, and contain news to a great many of the members. It will be curious to see how the

condition of things now disclosed will be considered and dealt with by co-operators, and to what extent they will be permitted to continue by the various local societies.

The anomaly of this feature of industrial co-operation is complete, and remains in the fact that the working men who have accumulated their capital, utilize it in the purchase of farm produce of other countries and send their money out of the country, when they, at the same time, might have purchased what they required of home farmers at the same prices and retained their money in the country for the employment of other labour and subsequent re-expenditure with themselves.

This broad question appeals to the national spirit which places it in advance of the much-debated topics of "free trade" or "fair trade." The larger consideration of self-interest must guide every true co-operator to a determination on this subject, which lies with the great aid and encouragement that may be given to home producers. This may be done by the exhibition of a desire to facilitate the consumption of their produce and by a concerted effort to preferentially *purchase from them while their produce can be procured on the same terms, conditions, and prices at which foreign produce can be acquired.*

The co-operators of the United Kingdom now expend upwards of thirty-four millions annually through their societies, three-fourths of that amount being for the purchase of food products for themselves, their wives, and families.

It is desirable that instead of the many theoretical and ephemeral questions that occupy their attention, every thought of the members of local societies should be directed to the consideration of the means by which, with a practical concentration of effort, these purchases may be made from our home farmers.

In this way it will be found that a great deal will be done towards developing our own home resources and destroying the anomalies that the great co-operative movements have brought into existence; when any diversion of the concentrated purchasing power which the industrial classes have created for themselves by "co-operating to buy" can be effectively made towards the support of home-grown produce, it should be promptly done. Thus co-operation directed to the encouragement of the British farmer, would lead to the development of a valuable service in co-operation—and bring about the local organization of producers in "co-operating to sell," the inevitable result being the creation of the

channels by which local producers and consumers would be brought into more direct communication, and thus home agriculture and industries would mutually aid each other to a degree that would tend to abolish agricultural distress and trade depression.


The accumulated capital of the various societies furnishes the opportunity for co-operators performing a gracious task that would commend the working classes to themselves, and promote much good feeling. The recent inquiry has shown the terrible sufferings of those of the working classes of London employed under the sweating system. It has been made evident that the evils have arisen from the inability of the shirt, shoe, and cabinet makers, tailors, seamstresses, &c., to provide themselves with requisite work-room accommodation, and to manage their own labour so that they could derive the whole benefit. A few thousand pounds would enable large workshops to be rented and fitted up to accommodate a few thousand workers. Co-operators could advance the requisite amount at 5 per cent. on the security of the leases and labour of the employés, and thus do a good work with ample security at a fair interest, and materially aid the development of co-operative production.

BOOK THE SECOND.

CHAPTER XXVII.

HOME-GROWN FOODS.

WHERE PRODUCED, AND HOW WASTED.

“OOD” is a generic term applicable to numerous commodities, each of which has a distinctive character that necessitates special considerations in any examination into the resources from whence it is supplied, and its availability for general consumption. Any definite inquiry into the past, present, and probable future supplies of meat, fruit, vegetables, milk, butter, cheese, poultry, and eggs will show that in each of the items we are without difficulty capable of supplying all our requirements from our own farms.

The considerations attaching to each of the special commodities named, are of so wide a range, and differ so much in detail, that it is not advisable to deal with them in a general manner if we are to do them adequate justice. I therefore propose to confine my observations

to each separately, and in the first instance take meat alone as being the most important.

The best agricultural authorities we have, viz., Sir Henry Thompson, Sir James Caird, Right Hon. H. Chaplin, M.P., Mr. J. A. Clarke, Major Craigie, J. Howard, Rd. Turnbull, &c., estimate the British meat crop, that is to say, the meat from home-bred animals annually slaughtered for consumption, at about 728,000 tons beef, 376,000 tons mutton, and 257,000 tons pork, being a total of 1,361,000 tons of actual fresh meat, exclusive of offal, the money value of which, at the moderate all-round average price of 6*d.* per pound, for dressed beef, mutton, and pork, being 76,216,000*l.*, every 5 per cent. that can be saved or made on which amount means the addition of 3,760,000*l.* to the annual profits of the farmers. But if the weight and value of the useful edible offal be added, which includes the head, heart, tail, tongue, kidney, tripe, fat, and other parts, weighing upwards of 300 pounds per beast, the total weight will be about 1,700,000 tons, and the value will reach 90,000,000*l.* sterling, an increase of each 5 per cent. on which would produce 4,500,000*l.* additional profit to the British farmer. But owing to the fact that the farmers do not

receive anything like adequate value for the offal, even as dealt with at present, it may be fairly taken that they are deprived of 10,000,000*l.* out of the 14,000,000*l.* therein estimated, while if a reasonable and a rational course were adopted in the utilization of the edible offal as a food product instead of for manufacturing purposes, at least a further sum of 4,000,000*l.* would be realized by them.

These enormous figures not only exhibit the national importance of this subject, and the grave consideration which it claims from thoughtful minds, but relating to only one of the articles of consumption that the agricultural industry provides for the people, may tend to instruct all classes of the large and important part the British farmer plays in providing for the food requirements of the nation, and the great extent to which the interests of home producers and consumers are mutually entwined, necessitating their consideration from mutual standpoints.

During 1886, 1887, and 1888 the total imports of live, dead, fresh, and preserved meats, hams, bacons, &c., from foreign countries and British possessions, less the quantity of same items exported reached a total of 61,869,431*l.* or an average of 20,623,143*l.* per annum

sterling, the details furnished by the official returns being—

Oxen and Bulls.

	No.	Value.	
1886	241,360	£4,358,887	
1887	219,222	3,802,655	
1888	287,266	5,130,837	
	<u>747,848</u>	<u>£13,292,379</u>	£13,292,379

Cows.

	No.	Value.	
1886	42,953	£571,052	
1887	38,766	489,063	
1888	49,724	634,982	
	<u>131,443</u>	<u>£1,695,097</u>	£1,695,097

Calves.

	No.	Value.	
1886	35,308	£138,933	
1887	37,973	147,087	
1888	40,098	146,155	
	<u>113,379</u>	<u>£432,175</u>	£432,175

Sheep and Lambs.

	No.	Value.	
1886	1,038,967	£2,011,198	
1887	971,403	1,645,837	
1888	956,210	1,740,549	
	<u>2,966,580</u>	<u>£5,397,584</u>	£5,397,584

Swine.

	No.	Value.	
1886	21,352	£63,360	
1887	21,965	64,424	
1888	24,509	74,784	
	<u>67,826</u>	<u>£202,568</u>	£202,568

Beef, Fresh.

	Tons.	Value.	
1886	40,339	£1,862,086	
1887	32,878	1,481,183	
1888	41,872	1,920,847	
	<u>115,089</u>	<u>£5,264,116</u>	£5,264,116

Meat from Abroad.

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Meat (Unenumerated), Salted, or Fresh.

	Tons.	Value.
1886	2115	£112,780
1887	2351	115,650
1888	2839	120,551
	<hr/>	<hr/>
Gross Imports	7305	£348,981

Deduct Quantity Exported.

	Tons.	Value.	
1886	1469	£92,976	
1887	3543	184,828	
1888	1773	9635	287,439
	<hr/>	<hr/>	
Net Imports	420	£61,542	£61,542

Mutton, Fresh.

	Tons.	Value.	
1886	32,614	£1,404,888	
1887	39,242	1,576,601	
1888	49,454	1,940,979	
	<hr/>	<hr/>	
	121,310	£4,922,468	£4,922,468

Pork, Fresh.

	Tons.	Value.	
1886	4,032	£199,363	
1887	7,686	379,603	
1888	12,136	556,954	
	<hr/>	<hr/>	
	23,854	£1,135,920	£1,135,920

Bacon.

	Tons.	Value.
1886	162,798	£6,142,470
1887	150,040	6,329,890
1888	142,726	6,392,959
	<hr/>	<hr/>
Gross Imports	455,554	£18,865,319

Deduct Quantity Exported.

	Tons.	Value.	
1886	13,627	£432,146	
1887	8,536	298,769	
1888	7,433	270,670	1,001,585
	<hr/>	<hr/>	
Net Imports	425,938	£17,863,734	£17,863,734

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*Foreign Proportions.**Hams.*

	Tons.	Value.	
1886	47,168	£2,236,872	
1887	46,030	2,390,051	
1888	36,415	1,923,936	
	<hr/> 129,613	<hr/> £6,550,859	£6,550,859

Meat, Preserved.

	Tons.	Value.	
1886	21,517	£1,167,010	
1887	25,959	1,349,985	
1888	27,129	1,377,023	
	<hr/> 74,605	<hr/> £3,894,018	£3,894,018

Pork, Salted, not Hams.

	Tons.	Value.	
1886	14,524	£403,829	
1887	13,641	393,221	
1888	12,244	359,921	
	<hr/> 43,409	<hr/> £1,156,971	£1,156,971
			<hr/> £61,869,431

Deducting the value of hams, bacon, salt and preserved meats, the actual value of the live stock and fresh dead meat for the three years is 32,403,849/. sterling, being about 9 per cent. in value of the actual total consumption. If, therefore, by any means the meat production of our own farmers can be further utilized or its yield increased, our requirements from abroad will be narrowed to small limits, and a proportion of the amount now sent abroad in payment for foods will remain in this country for redistribution amongst our own working classes.

Home and Foreign Produce. 227

Some idea of the relative positions of home-grown and foreign produce may be gathered from the value of the annual crops and imports of each, which are estimated as follows:—

HOME-GROWN PRODUCE.				
MEAT.				
		Tons.		
Beef	...	...	728,000	
Mutton	...	...	376,000	
Pork	...	...	257,000	
			<hr/>	
			1,361,000 tons, at 6d. per lb.	= £76,216,000
dible offal			339,000 „ „	= 13,784,000
			<hr/>	
Total Meat	1,700,000 tons		„	= £90,000,000

CEREAL AND DAIRY.				
		Acres.		
Wheat and other cereals	9,248,675...	...	...	= £38,245,093
Potatoes	...	1,362,465...	...	= 21,458,824
Beans and Peas	...	627,595...	...	= 3,133,047
Vegetables	...	2,921,239...	...	= 1,101,262
Orchards	...	335,550...	...	= 6,711,000
Poultry, pigeons, & eggs	...	...	...	= 7,000,000
Milk	...	555,000,000 gallons	...	= 18,500,000
Cheese	...	2,710,000 cwt.	...	= 6,955,666
Butter	...	1,918,660 „	...	= 10,744,496
				<hr/>
Annual Value of Home Produce	...	...		<u>£203,849,388</u>

Forming a gross total value of 203,849,388l. for our own supplies; while the importations from abroad for 1888 were:—

FOREIGN MEAT.				
		Tons.		
Beef	...	41,872	...	= £1,920,847
Mutton	...	49,454	...	= 1,940,979
Pork	...	12,136	...	= 556,954
Unenumerated	...	2,839	...	= 120,557
Preserved meat	...	27,129	...	= £1,377,023
				<hr/>
Total, fresh meat, &c.	133,430 tons	...	...	<u>= £5,916,390</u>

CEREAL AND DAIRY.

Wheat and cereals	...	...	...	...	...	£42,160,033
Beans and peas	...	...	...	...	...	1,625,835
Potatoes	...	...	...	...	...	802,110
Vegetables...	...	...	...	...	...	621,771
Fruit	...	...	...	...	...	3,888,995
Poultry	...	...	...	...	...	403,197
Eggs	...	...	...	...	...	3,077,109
Cheese	...	...	...	...	...	4,542,278
Butter	...	...	...	...	...	8,902,193
Live animals	...	...	...	...	...	7,855,091
						<u>£79,794,972</u>

Furnishing a gross total of 79,794,972*l.*, most of which could have been produced at home, and thus avoid the annual despatch of a considerable portion of about eighty millions sterling out of the country, a sum which in reality is a deduction from the aggregate income of our own working classes, and the real cause of the existing "depression in trade" and "agricultural distress."

These figures are quite sufficient in extent to set working men and farmers thinking how best to act, so as to retain the money in the country and cause it to be expended in home-grown produce, so that each and all might participate in it.



CHAPTER XXVIII.

THE REMEDY.



THE remedy for this condition of things, so far as fresh meat is concerned, is simple and effective. Slaughter the animals in the districts where they are reared and fattened, and transport the dead meat instead of live stock, utilizing the edible offal while fresh.

The benefits that would accrue from the adoption of the system are numerous ; wherever it has been tested abroad, it has superseded the transport of live stock ; and even from Aberdeen, where the dead-meat trade is practised, it is gradually overcoming the trade in live cattle.

In America, the slaughter of cattle in the West, where they are fed, and the transmission of the carcasses in refrigerator cars, to the populous cities of the East for consumption, is rapidly superseding the transport of live cattle.

There it has been found that, in addition to the saving of waste, the costs of keep, care and inspection in transit are avoided, while, the

meat being sold direct to the retail butcher, the profits of the numerous intermediary traders are saved.

The advantages producers and consumers have derived there from the adoption of this system has been found to be most remarkable, and in every instance has led to a reduction of $1\frac{1}{2}d.$ to $2d.$ per lb. in the price of meat, while the farmer's benefits, as measured by the increase in the trade, have been equally great.

One example may be adduced as an illustration of the whole. From the published returns of live and dead meat carried by the railways to the New England States in 1878 and 1883, it was ascertained that the relative quantities were :—

Date.	Alive.	Dead.
1878	79,077 tons.	4,740 tons.
1883	40,200 „	106,894 „

showing that while the transport of live cattle had decreased 38,877 tons, or nearly 50 per cent., dead meat had increased 102,154 tons, thereby demonstrating that the benefits of the system had resulted in nearly doubling, the meat consumption of a district in a short period.

But it is not necessary to travel outside the kingdom for evidence as to the value of a dead-meat traffic ; the returns for 1875, 1885, 1886, and 1887 of the quantities of country and town

killed meat, received at the London Central Meat Market, furnishes an example that must force itself on the minds of home agriculturists. These show that while country killed meat increases in quantity, that of town killed remains stationary. The receipts were :—

Date.	Country-killed Meat.	Town-killed Meat.
1875	86,976 tons.	77,563 tons.
1885	120,706 „	67,522 „
1886	118,542 „	74,070 „
1887	123,064 „	74,817 „

The system of home-grown meat distribution is extravagant and wasteful, a continual and unnecessary expenditure in material and labour taking place at every stage.

The moment live stock leaves the farm it commences to decrease in weight and value, while the costs and expenses continue to increase.

In a live or dead form animals unnecessarily pass through the hands of numerous middlemen, whose profits either the producer or consumer must pay. Eventually those charges fall on the consumer.

The isolated system of slaughtering is disorganized, the “offal,” which consists of all parts of the animal except the actual two sides of beef, not being utilized to its full extent.

The establishment of abattoirs in each county, with chambers for cooling meat, and appliances and arrangements for utilizing the edible offal while fresh, would add largely to the food products of the country, materially increasing the amount realized by farmers; and at the same time decrease the price of meat to consumers.

This has been the result in America, where the concentration of slaughtering in the agricultural districts has, in a comparatively short time, completely revolutionized the meat trade there, although the whole of the live cattle trade, backed up by the great railway interests, made a united effort to oppose the change.

The adoption of similar means here would bring millions annually to the pockets of our farmers, and so materially increase our own available food resources, as to render us to a great extent independent of foreign supplies of meat.

But our home farmers do not suffer only from their own neglect and inattention, they have to pay nearly double the charges for the conveyance of their live stock to market to what the importers of foreign animals are charged. The aggregate amount thus paid by them on their stock will reach nearly one million pounds sterling annually.

•

This great evil may also be traced to the isolated manner that farmers work, which results in their individually making a large number of small consignments, which the railway authorities allege cause them greater trouble and expense in transmission; but the real cause will be found to be that the farmers, being disunited, are powerless to act for themselves. Whenever they can unite in their operations, and place themselves in a position to offer the railway companies a traffic in bulk consignments, they will be able to secure the same beneficial rates accorded to imported meats.

The measures that have been taken abroad to supply our markets with produce, although numerous, are all exceedingly simple in practice, and, upon examination, will be found not only capable of ready application to the circumstances of our home producers and consumers, but may be more advantageously utilized by them at home than practised abroad.

The principles will be found largely to consist in a practical application of the systems of "Combination," "Refrigeration," and "Evaporation;" and to the different working of these three measures in the production, collection, and distribution of all food products attention in the future must be directed.

CHAPTER XXIX.

BRITISH AND FOREIGN SYSTEMS OF DISTRIBUTION.



COMBINATION, Refrigeration, Evaporation will be considered strange terms to direct the attention of British agriculturists to, as the means of their release from the desperate position they now occupy. To most of them the terms will be new, to many unintelligible, while but few will realize that they can be in any way connected with the great national industry in which they are engaged. Those expressions, however, represent the means by which farmers in foreign lands, near and far, are enabled to send their produce to foreign markets, and successfully compete with home farmers on their own ground, notwithstanding the unequal terms upon which they contend, owing to their being handicapped with more expensive labour, and having to bear the heavy costs, charges, and expenses incidental to preparation for shipment, transit, and realization of their produce, items which in the aggregate form a most

serious first charge on the amount actually received.

It must be interesting, therefore, to study the means by which these great results are achieved by others, to trace out the causes which have operated against their not having been hitherto utilized by our own farmers, and to consider their applicability to, and how they may best be brought into the active service of, home agriculturists.

Clearly to understand the subject many considerations are involved, among others it is necessary to define the systems referred to as combination, refrigeration, and evaporation ; to trace out the means by which they are utilized by agriculturists in other countries, and the results derivable from them ; to ascertain the causes that have operated against their adoption by home farmers, and to consider how these causes may be removed ; to determine the aggregate results that could be derivable from their singular and collective adoption in the various agricultural branches interested, and the facilities available by which they can be brought into active existence.

The terms may be briefly defined as follows :—

Combination.—The systematic organization

of the owners of produce and material, for their economic production, utilization, collection, distribution, and realization.

Refrigeration.—The systematic application of the known natural law for the preservation of perishable foods by means of a dry, low temperature.

Evaporation.—The systematic application of the known natural law for the perservation of perishable produce by means of a dry, high temperature.

Cold air and hot air, although elements of an opposite character, furnish the means for effectively preserving all perishable produce; they are destined to form an important feature in future in the retention and distribution of food supplies; and inasmuch as it is essential to bear in mind that while the tendency of commercial and industrial centres is to concentrate, and thus form extensive areas of consumption, the fields of production become enlarged and more remote, necessitating the introduction of intermediaries for the purpose of effecting a disposal of produce.

It therefore becomes a necessity for those engaged in agriculture and its allied industries to consider the best means by which these agents can be economically applied in the

retention and distribution of food products, so as to reduce the number of intermediaries to a minimum, and to bring producers and consumers within touch.

In aid of such movement there is the satisfactory assurance that the position of all home agriculturists, in being within easy reach of the whole of the large centres of population, lends itself to give them an unapproachable advantage over their foreign competitors, so that with similar arrangements and equal inland transit facilities, they will be able to successfully compete with imported produce, with such profitable results to themselves as to drive it from the market, and thus allow the money that at present goes abroad to remain with us, thereby yielding almost inestimable benefits to the nation.

An examination into the working of the subjects show that abroad—

Combination has resulted in the establishment of the factories and creameries that sent a large portion of the one hundred and sixty thousand tons of butter and cheese that reached us last year, and for which we paid twelve million pounds sterling; also canneries, that sent preserved meat to the value of one and a half million sterling—and one

million sterling worth of fish, fruits, and sundries.

Refrigeration was the means by which, in the same period, we imported 80,000 tons of fresh beef and mutton, at a cost of three millions and a half pounds sterling.

Evaporation was employed in the preparation of the five hundred thousand cases of condensed milk, and of the large quantities of dried fruits and vegetables we received, which, great as it was, formed but an infinitesimal portion of the respective crops preserved for their local, home, and foreign consumption by the farmers of America, Canada, and Eastern Europe.

It appears that these benefits have been brought about in all instances by the systematic organization of commercial arrangements—the employment of labour-saving machinery, the prevention of loss by waste, and the economic use of all refuse—each of these being movements by which either the cost of production is decreased, or the yield of produce and the receipts for it increased.

It will thus be seen that the result that agriculturists abroad have derived from the practice of the systems referred to has proved most beneficial, and placed them in a position, in face of numerous heavy charges and ex-


penses, to enter our markets and compete with our own farmers. It is also unmistakably evident that our farmers, owing to the advantage they hold by situation and climate, can more advantageously and at a less cost carry out the same means in their operations.

Before considering how the systems adopted abroad may be best brought into practice in our own land, it is essential to determine the causes that have operated against their earlier introduction and practice, for upon these points being generally clearly understood and agreed upon, it will be possible more readily to bring new practices into operation and derive successful results from them.

It is only necessary to point out that arrangements in connection with commercial transactions are purely of a practical character, which it would be quite as absurd to say cannot be carried out by our own farmers if they have the inclination, as it is to find that they do not now do so. If our farmers could be compelled to travel for a short time and make themselves acquainted with the way things are done abroad, they would return with better ideas of their own advantageous position, and understand how to utilize it.

CHAPTER XXX.

ORGANIZATION.

HE depressed and complicated condition to which agriculture has gradually descended with us is entirely due to the isolated manner in which our farmers deal with and dispose of their produce, and the elimination of all sound commercial knowledge and usage in the conduct of their operations.

The transport and distribution of perishable foods, although subjects that have caused anxiety for ages, and given rise to a large amount of theoretical experiments in our own time, have both recently been successfully accomplished by other countries.

It is important to bear in mind that the discovery of the value of these means to foreign producers is of comparatively recent date.

We have not yet attempted actual improvements in either commercially, and with us the great gulf still exists between producer and consumer, wherein is absorbed a large propor-

tion of the amounts that the latter pay, and which the former ought to but does not receive.

The practical lessons that have been taught to us by those engaged in similar operations abroad, go far to show that by systematic organization, producers and consumers in this country, may be readily brought within touch, to their own mutual and the general national advantage.

It was in 1868 that the first shipments of preserved meat on a commercial scale arrived from Australia, in 1870 that the manufacture of condensed milk commenced, while the canning or tinning of salmon at British Columbia did not begin until two or three years later. The shipment of refrigerated meat commenced in 1877. The transport of dressed beef against live stock from Chicago to New York and the cities of the East commenced in 1882, while the preparation of evaporated fruits was of a still later date.

Therefore the recent adoption and successful practice of these measures by farmers abroad furnish sound evidence of the practical consideration that is there given, to every means by which perishable produce can be protected from decay, and placed in a condition that it may be safely and profitably transmitted in all

directions, irrespective of climate, time or distance, and packed in a form that it may readily meet the requirements of traders and consumers.

It should not surprise any one in this great commercial nation, that combination and organization of details might be the means for bringing producer and consumer together, for it is by those instrumentalities that the greatest of the social institutions of the country have been brought to their present state of perfection.

By organization, our post-office, banking arrangements, railway systems, and all the successful business, public or private, throughout the country, owe their flourishing position, it being solely to the completeness upon which their details have been conceived and are carried out that their success is due.

And it is to the preparation and observation of the details upon which may be organized a system by which the produce of the agricultural districts of the country may be brought within reach of or even to the door of the consumer in the town, that the success and benefits attending simple but effective distribution may be assured.

The principal features that are necessary in the organization of such a system are,—

1. An affiliation of producers for mutual interests.

2. A regular supply of produce in forms required by consumers.

3. The assurance of a reliable quality and defined character for all articles disposed of.

4. A fixed price for all produce according to quality, condition, and season.

5. A combination of consumers to purchase their daily food from a fixed source for a given term.

It will be noted that all the requirements named may be provided by the exercise of common sense and judicious forethought, capital being in no way an element in the combination, therefore it is difficult for any one acquainted with the ready manner in which the realization of produce is effected abroad, to understand the cause that operates against our farmers practising them. As will be seen, the principal features are of the simplest possible character that no reasonable obstacle would prevent being practised, did the desire to do so exist.

With these points adjusted, all the difficulties that exist and prevent producers reaching consumers, vanish, and the basis is laid for the regular sale of all articles of food that farmers

produce, in at least the one important direction of the numerous industrial co-operative stores that are established throughout the country, whose members at present expend upwards of thirty-four million pounds sterling every year through their own organizations, three-fourths of which is for articles of food other than fresh meat.

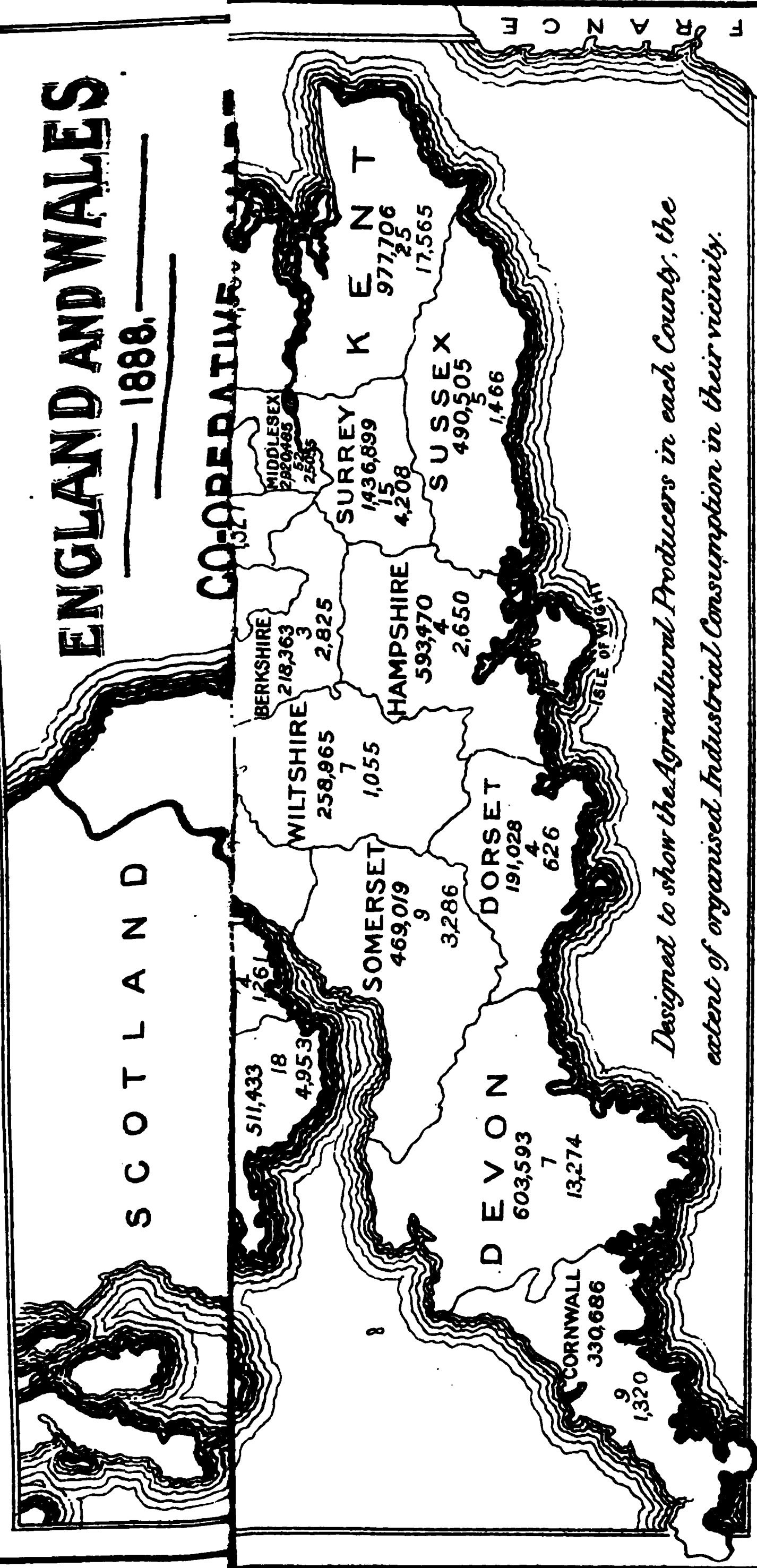
As will be seen by the accompanying map, the co-operative societies exist more or less in every district throughout the country, and wherever farmers determine to form themselves into a co-operative society for the joint sale of their produce, they may through their committee approach the members of the co-operative societies in their district formed to buy through their committees, when it will be found that producers and consumers are brought into such close contact, that business advantageous to both must necessarily ensue.

ENGLAND AND WALES

SCOTLAND

1888.

CO-OPERATIVE



Designed to show the Agricultural Producers in each County, the extent of organised Industrial Consumption in their vicinity.

CHAPTER XXXI.

THE SCIENTIFIC, MECHANICAL AND PRACTICAL
ARRANGEMENTS THAT ENABLE FOREIGN PRO-
DUCE TO DISPLACE HOME-GROWN FOODS IN
BRITISH MARKETS.



THE means and manner by which the systems of combination, refrigeration, and evaporation, are brought into practical operation abroad, vary to a great extent with the particular commodity, and the numerous surrounding circumstances, so that the terms are capable of a different interpretation in almost every instance.

For example, the meat trades of the United States, Australia, and South America are each and all conducted upon a distinct and widely different basis.

America, to a great extent, possesses one common centre, where the bulk of the fat live stock of the country is concentrated—viz. Chicago ; and it is from there that the supplies of meat, in a live or dead form, are despatched to the cities of the Eastern States and abroad.

The meat trade in connection with Australia, and New Zealand, differs from that of America, inasmuch as the principal supply of the one is beef, that of the other being mutton; the conduct of the two trades also varies in every respect.

In America there are large wholesale carcase men, who buy their live stock, in the Chicago market, have their own immense abattoirs, with preserving establishments, and staff for the slaughter of animals, the utilization of their products, and the forwarding of their stocks of meat to the various destinations.

This collection of live stock from all the ranches, enables operations to be conceived and carried out on such an enormous scale, that at many single establishments in the vicinity of the stock-yards, an average of 1000 bullocks are slaughtered daily, the meat and other products being disposed of as mentioned.

As the total number of animals slaughtered in Chicago district alone is about one and a quarter million head per annum, the concentration of this enormous supply enables capital to be beneficially employed in its manipulation; this, in its turn, results in the industrial occupation of numerous persons, whose united labour is directed to the most profitable use of the

coarse meats and edible offal, and even other refuse material, that but for the quantity resulting from the concentration of stock would be wasted.

Refrigeration in various forms is the means whereby this great business in perishable food is profitably and successfully conducted. The meats are maintained in a state of perfect freshness from the slaughter of the animals in the far-off Western States until they reach the consumers in the cities of the East, or the still further distance necessary to place them in the markets and towns of Great Britain or the Continent. Under these circumstances how much better must be the position of the British farmer in this matter if only proper advantage were taken of it, than his American opponent on the verge of the Wild West. The one has thousands of miles of sea and land transit, to provide for, and over which to transmit his meat ; the other has his produce so much within reach that the daily requirements of his customers may be provided for.

The one has the prejudice of consumers against foreign meats to encounter ; the other has the prejudice of the same consumer in his favour to such an extent that more money would be readily paid for his home-grown meat in pre-

ference to the American if they both were placed side by side.

The process of refrigeration, as carried out in America, is as follows:—Immediately the carcase is dressed it is placed in chambers maintained at varying cool temperatures of 36 to 40 degrees, where it remains from 36 to 48 hours, in order to enable the meat to set, by allowing the animal heat and gases to be gradually eliminated from flesh and bone, during which time the meat becomes thoroughly chilled to the marrow, it is thus thoroughly preserved internally, and any decay must commence from the outside instead of from the inside.

The meat is then canvassed, so as to keep it clean in transit and it is then removed to the refrigerator cars for conveyance to the Eastern cities or to the seaboard, the cars being kept at the low temperature of from 33 to 35 degrees. Should the meat be destined for export, it is on arrival at the port of shipment placed in the refrigerating chambers on board the vessel, in which the temperature is still lower, being kept a few degrees below freezing, sufficiently low to harden the skin and fat, but not enough to freeze the meat.

It is absolutely necessary gradually to chill the meat from the higher state of temperature

as, if it is dealt with in any other way, the whole of the animal heat is not eliminated, and upon the meat being taken from the refrigerator decay sets in internally and it soon becomes black and tainted.

The losses that have been sustained by chilling meats suddenly, or placing them in refrigerators at a low temperature shortly after slaughter, have been very serious.

Therefore in meat refrigeration great importance is attached to the gradual and proper extraction of the animal heats and gases in all cases ; if that is not done effectively, the meat, more especially if it is beef, is almost sure to become bad soon after being thawed.

In Australia and New Zealand the sheep farmer or squatter has no establishment of his own, but he sends his animals to a public establishment at the port of shipment, where, for a fixed sum per head, or per pound of meat, they are slaughtered, the carcasses dressed, chilled, and prepared for shipment, the tallow being melted and run into casks, and the skins packed into bales.

The whole are then shipped to the squatter's agent in England, to whom the bill of lading is forwarded, the owner being saved all trouble, disposes of his meat, tallow, and skins in

his own way through his agent, from whom he receives the proceeds. By this system, excepting his own agent, no middle-men or dealers intervene between the sheep farmer of the Australian Bush, and the salesmen in the London or provincial meat market.

The system of refrigeration in the colonies also differs from that of America, inasmuch as after slaughter the carcasses are placed in a cool room, and when the animal heats and gases have been eliminated the carcasses are changed into colder chambers and frozen hard, and in that state transferred to the insulated cool chambers of the vessel, in which a maximum temperature of 28 degrees Fahrenheit is maintained during the voyage home.

The refrigerated meat trade of South America differs from both the American and Australasian trades in being conducted by two large companies or organizations, who have their own establishments in England and in South America where business is conducted by their own staff, and in having to a great extent entered into combinations with the machinery manufacturers and shipowners, by which mutually advantageous arrangements were arrived at.

The amount of capital and credit brought to bear on these undertakings is very large.

The South American is at present essentially a mutton trade, and those engaged in it simply occupy the position of middle-men buying in the cheapest market and selling to the best advantage possible, but they must keep going on, and at times have been compelled to carry on their business at a serious loss in order to keep in active employment the machines and boats engaged in the trade.

The South Americans are very anxious to create a beef trade, and have sent a few small trial consignments, but the character of their beef is not good enough to compete with the high-class English or Scotch beef to which the British public are accustomed; and it will be many a long year before they improve their breed of cattle to the extent that will enable them to make their meat popular in our markets.

To aid the development of the trade and induce the investment of capital, the Governments of the Argentine Republic have determined to subsidize the business of meat exportation by the payment of liberal bounties and the concession of other privileges.

The New Zealanders and Australians have also attempted a beef trade, but thus far the prices at which their meat has been disposed of in the wholesale market have not been

encouraging. Recently, however, several consignments of beef in joint have been made from New Zealand, but it has only realized a comparatively low price. Arrangements have also been completed for the regular shipment of eight hundred tons of beef monthly from Northern Queensland in Australia. The rate of freight is reported as reasonable, therefore these shipments may prove a formidable competitor with those who already hold possession of the markets.

It will thus be seen that in America, where the national meat trade is nearly all concentrated at one spot, the business is conducted by large wholesale carcase butchers, who carry on their own inland trade and ship the surplus beef in an irregular manner, on speculative account to our market, when their own is glutted ;

That in Australia, where public refrigerating establishments are provided, the sheep farmer can forward his 50, 500, or 5000 sheep to the port to be dealt with in a mechanical method on his own account at fixed charges, and forwarded as he may direct to an agent or salesman in this country ;

While in South America there are exceedingly large organizations who have provided enormous aggregate capitals, in combination with

machinists and steamship owners, to enable them to carry out their arrangements on joint account.

Thus each party, although the circumstances vary, achieve the object in view by the employment of the same principal agents, viz. Refrigeration and Combination. It is true that the details of these agencies differ, but the actual net result, which consists in the successful placing of fresh meat from far-off lands in the British market, is the same well-organized business, and furnishes a striking contrast to the home system of unorganized meat distribution.

Whether it is the chilled beef of America or the frozen mutton of Australia, New Zealand, or the Argentine, the meat invariably arrives in good order, irrespective of time, distance, or climate, and can be retained or disposed of at the will of owners, forming a valuable addition to the food supplies of the people ; while on the other hand, the home-grown meat of the British farmer, wherever it may be, must be sold shortly after slaughter, and at whatever price dealers choose to pay for it.

Thus, whether the combinations are the systematic and practical organizations of labour, for the saving of expenses and utilizing material, coupled with properly arranged railway facilities

for transit, as in America ; whether it is the combination of capital and mechanical organization for the supply of special labour and appliances at fixed charges, for readily placing Colonial producers in direct communication with home consumers, which are furnished by the establishments in Australia and New Zealand ; or whether the combination consists of capitalists representing various interests that enable the establishments in South America, and the vessels in that trade to be fitted up with massive and expensive machines, so as to collect on speculative account, enormous quantities of sheep and convert them into mutton, for transmission to our market ;

We have still the same problem practically and satisfactorily solved abroad, which has never been done in connection with Home agriculture, viz. a number of varied interests combining effectively, to carry out their different objects for mutual advantage, and succeeding in the endeavour.

It will thus be seen that Refrigeration and Combination have been the means by which the cattle-men of the Western States, the squatters of Australia, and the estancieros of South America have successfully entered the British markets and competed with home graziers as

meat producers, and when the British farmers can combine together to concentrate their stock for slaughter, they will, by adopting the same means that are employed by their foreign competitors, be in a position to economize much of the products now wasted, and by employing refrigeration in the distribution, they will enjoy so many advantages over their American and other competitors, in the costs of transit and realization, as to be able to successfully compete with them in the trade in which they have embarked.

The British farmer already possesses an undeniable advantage over his competitors—in the quality of his meat, and the predilection of the people in favour of it. With this and the naturally beneficial position he occupies in being in close proximity to consumers, in every direction the home farmer has only himself to blame for the unfortunate condition into which he has drifted.



CHAPTER XXXII.

THE FARMERS' OUTLOOK.



THE recent creation of the great market monopoly by the Corporation of London, preventing any free meeting between farmers and retail butchers, operates to the disadvantage of the former, and seriously affects their position.

In no city in the world can a similar state of things be found by which the actual producer is prohibited from entering a market and dealing with the purchasers direct, if they so wish. The result of the course adopted by the City authorities in handing over their meat-market to a body of men, about one-fourth of whom are salesmen and three-fourths dealers, will be found in the fact that the wholesale price which the producer receives bears no relative position to the retail price that the consumer pays, and the farmers are powerless to help themselves, and must accept the price sent to them with the best grace possible.

Further disadvantages home farmers labour

under arise from the improved manner in which foreign producers enter into competition with them in our own markets. By utilizing the process of refrigeration foreign shippers can carry out their transactions on a large scale and in a systematic manner. This enables them to reap advantages that can only be acquired by home farmers by their conducting their business upon a similar system. Large as are the amounts to be saved by the improvements pointed out in the operations incidental to production, they can be readily exceeded by the adoption of combined action in organizing the realization of their stock, and providing for its disposal as meat.

However, in looking at the actual net results that have been obtained by those engaged in the importation of meats, they will be found not to have proved in any degree pecuniary successes; in fact, it is notorious that the aggregate results of the shipments in all directions have been more frequently on the wrong side of the ledger than the right; and had it not been for the marked decrease that has been made in the freight and charges incidental to transit and realization, the shipments from some places would have ceased.

A striking illustration of the closeness of

the trade may be noted from the address delivered by the chairman of one of the Australian meat shipping companies to a meeting of their shareholders, wherein he stated that the amounts realized by the sale of the skins and tallow of the sheep they had shipped exceeded their whole cost, showing that the meat actually cost less than nothing, yet the final end of the whole of the shipments was to leave a loss; and as a consequence, the company ceased operations, after losing upwards of 100,000%.

The New Zealand sheep, which are very fine in quality and appearance, go readily into consumption—many say as English—but they have only resulted in producing about one penny per pound for the meat, while the hitherto published accounts of the South American companies not only show no profit for their shareholders, but recently a loss of nearly 40,000% was declared by one company on ten months' business.

These important and interesting facts furnish material for thought, and may be taken as gleams of sunshine for British farmers, inasmuch as they indicate the limit of the competition to which they can be subjected, and clearly demonstrate that if by any combination of their own they can arrive at the means for

working among themselves on lines similar to those of their competitors, when by the concentration of regular supplies of large quantities of live stock for slaughter at fixed spots, they would then occupy a position equal to that of their rivals, so far as the utilization of waste products is concerned, with the additional advantages of their being freed from the heavy expenses incidental to the investment of the capital and maintenance of establishments necessary to carry out operations on a large scale, while they will ensure the beneficial results derivable from the predilection of the people for home-grown meat at almost any cost.

It must be borne in mind that there is a point at which meat cannot be imported profitably, and whenever home meat producers can conduct their operations with profit to themselves, so as to furnish our home markets with large supplies at low prices, animal food will not only be brought more within reach of the working classes, but foreign importations will cease as unprofitable, and the amount of money sent abroad in payment for what we now receive will remain with ourselves for re-expenditure.

That the point at which this condition of things must arise is not far distant is evidenced from the fact that the rates now current are not

remunerative to the shippers of meat from abroad generally ; while in America the prices of beef promise to increase at an early date.

This state of affairs should weigh with the men of "light and leading" in the agricultural and industrial world, and stimulate them to consider how the arrangements that within the last few years have been so successfully brought into operation and carried out abroad, can be introduced and brought into effective existence in connection with our home system of meat distribution, and so be the means of placing the advantages obtainable by Combination, and Refrigeration, into the pockets of the British farmers, and enable them to profitably furnish a larger amount of meat at a smaller cost to themselves and with ultimate advantage to consumers.

The causes that hitherto have operated against the introduction of these improvements are entirely owing to the isolated manner in which farmers work in this country, and to their utter distaste of fresh methods—unlike their competitors abroad, who, mostly finding themselves in new countries under altered circumstances and unfettered with any bygone traditions, are at all times on the alert to discover some means by which they may improve their operations.

Home farmers, on the contrary, do everything simply because their fathers, grandfathers, and their predecessors have done the same from time immemorial. No thought or consideration is given to the altered circumstances of society in every direction ; it is sufficient that their forefathers followed a certain course for them to adopt it, and carry it on without change.

The landowners throughout the kingdom could at this juncture render an important service to the subject generally, by taking an active part in its formation and adjustment ; they have to a large extent travelled and learnt how matters are managed abroad, in addition to which farmers still look up to and have implicit confidence in them. While landlords in many parts of the country do take an interest in the progress of their tenants, the matter has not been so generally taken up as it should be, and when a class of unscrupulous agitators continue to use every effort to sow dissension between landlords, tenants, and labourers a great national service would be rendered by those who are still looked up to in their respective districts taking farmers by the hand and teaching them how to organize themselves and profitably realize their produce.

CHAPTER XXXIII.

FARMERS' ADVANTAGES.

IN connection with meat refrigeration it is essential to the home agriculturist to bear in mind the gradations in temperature referred to, as in those important features will be found the germ of the success that must attend Home over Foreign operations when the time shall arrive for refrigerators to be applied in connection with the distribution of fresh meat by the British farmer.

This success will arise from two circumstances—first, the small cost of the temperature necessary to keep the meat in good condition; second, the short time occupied in the transit from production to consumption, during which the expenses of providing the cold temperature must be incurred.

Meat will improve, and can be readily maintained in good condition for two to three weeks in a dry temperature of 37 to 38 degrees Fahrenheit, which can be obtained and retained in a perfectly insulated chamber at a moderate,

and, in some instances, at a nominal cost ; but as cold descends, the relative cost of the production of each degree increases, and where a temperature below freezing is required for a long time, powerful machinery must be employed at a large outlay of capital, and heavy working expenses incurred to obtain and maintain it, which materially adds to the expense of the transit of meat.

It may be noted that the relative difference in the distances from the abattoirs in Western States of America to the British markets, and from those in the home grazing districts to the same destination, is equal to one hour for each 1000 miles.

This alone furnishes advantages that naturally yield beneficial results to home-grown meats, as not only does the requisite cold temperature bear a marked difference in the cost of its procuration, but the time in which it is required to be maintained would be about as two to sixteen—that is to say, that while meat killed in Chicago would average about sixteen days in preparation, and transit from slaughter to the British retail butcher, home-grown meat would average but two days, one of which would be utilized in putting the meat in proper condition for consumption.

But the benefits to the British farmer do not end with these indisputable advantageous circumstances, inasmuch as by a combined and organized system for the regular supply of animals for slaughter, a large number would of necessity be fed in the vicinity of the slaughter-house for a few weeks each, so as to be ready for killing when required, they would thus be increasing in weight and improving in condition until actually wanted for slaughter, and therefore at all times avoiding a glutted market, while the shipper from abroad must send his consignments on speculative account, and take his chance as to the state of the market when it arrives, with the indisputable fact before him that prices are invariably high, when the market is bare and he has nothing in it to sell.

This improved condition of things can be readily attained by the provision of slaughter-houses with cooling chambers attached, and by organizing the system of sale. Those most suitable for home requirements are small, inexpensively worked establishments, which should be in the midst of the grazing districts, adjoining railway and water communication.

Taking the English counties as a basis of calculation, it will be found that the average daily outturn of live stock is from 60 to 100

bullocks and from 400 to 1000 sheep, and that the provision of the buildings necessary for the purpose would cost but a comparatively small sum, while there are but few districts where buildings do not at present exist that could be fitted up and adapted for the purpose at a small expenditure. The establishment of this system of slaughter would lend itself in a marvellous way to the creation of a simple system of meat sale and distribution.

It is an undoubted axiom in all commercial transactions that trade will follow where the advantages are made for it, and in the proposed course of concentrated slaughter, every step and stage furnishes an advantage for trade buyers that they are sure to realize; the benefits of the supply of meat of specified quality at fixed prices will create the demand from the retail butcher, who, instead of going or sending to the market, will have the stock for his shop, direct from the slaughter-house, where he can procure just exactly what he requires for his customers at a large saving of cost, time, trouble and expense, and besides being in a position to assure them that his meat is really prime English.

The preparation for consumption of the coarse and boiling joints and much of the so-called offal while fresh in form, that they may be

readily saleable by ordinary butchers, will bring them fresh articles of trade by which they may largely increase their business without in any way adding to their expenses—and in this way the movements of the farmer in the direction indicated is likely to prove acceptable to the smaller retail butcher.

It must be remembered that the butcher of the present day differs from the same tradesman of olden times; formerly the butcher bought his live stock of the farmer direct and slaughtered it on his own premises. Sanitary science has rightfully demanded the abolition of private slaughter-houses, and as a consequence many butchers of the present day, both in London and the large provincial towns, purchase meat solely; and without question they will prefer purchasing of the farmers direct, when they are in a position to sell, to buying of the dealers or carcase butchers—more especially if they can be supplied with made goods in which the public have confidence and by the sale of which they can make further profits.



CHAPTER XXXIV.

COMBINATION AND ITS RESULTS.



THE successful establishment of business relations in this one direction, upon a mutually satisfactory basis, would be followed by an extension of the system by means of the ordinary retail traders that are to be found in all districts with whom definite agencies may be also formed for direct sales on the same terms as with the co-operative stores.

The keystone of the position lies in the fact that the lesson that farmers must teach themselves, or be taught, is not how they can send their products away from themselves for sale by others, but how they can best occupy the position of local collectors or producers in a form that will attract buyers to themselves.

In this will be found the germ of the principle of direct sale to the consumer, and the avoidance of waste in distribution. The lesson is one that may be easily learnt and brought into practice, it being brimful of commercial truths, each of which is identified with a profitable result.

On the other hand, it will also be seen by consumers that the direct purchase from farmers upon the spot of production at current wholesale rates, or even at somewhat higher ones, would result in a large proportionate saving of the present amount expended by working men for their foods ; but to this extent the saving would be one entirely incidental to the procurement of material, which is but a portion of the advantages attainable by them from the adoption of a systematic course of procedure throughout.

The result of this procedure would be the creation of two systems of combination in connection with food distribution that do not at present exist—viz. that of the organization of producers to furnish the supply, and that of consumers to ensure the demand, both to combine in the operations incidental to the preparation of produce for consumption in special directions, and its ultimate purchase at fixed prices, such creations must, among other things, have these results :—

Firstly. It will ensure the farmer a prompt and certain sale for his produce at a known price and in an inexpensive manner, and give him confidence to vigorously pursue his efforts.

Secondly. It will largely add to the supply of

home-grown produce, and leave a large amount of money in the country that must, in the ordinary course of events, be expended in giving employment to our working classes.

Thirdly. It will persistently interfere with, and render ineffective the establishment of "trusts," "corners," "rings," and gambling in "futures," that is now carried on by speculators, dealers, jobbers, and other middlemen at home and abroad, who take advantage of and thrive by the indirect and inefficient system of the food distribution that at present exists.

Fourthly. It will tend to develop our national resources, and demonstrate our ability to largely provide ourselves with our own food requirements under all circumstances, and thus render us to a great extent independent of the world.

Fifthly. It will permanently provide the British workman with an abundance of good and cheap bread, meat, and other foods by his own industry and efforts, without recourse to any extraneous measures to artificially support the natural development of the land.

Sixthly. It will bring into a beneficial union and identify the mutual interests of all classes engaged in production, distribution, and consumption, furnishing each with legitimate occupation and adequate remuneration.

Seventhly. It will facilitate the preparation and supply of substantial meals at a nominal cost to the working classes at their places of labour, and do much to convert the existing mid-day dinner-hour from its present period of rush and hurry into a time of pleasurable and beneficial rest.

Each and all of which are good and sufficient reasons for all classes taking whatever steps may be necessary to aid in bringing about a union of interests for the mutual benefit of all. The subject is neither a personal nor a small one, but both national and great in every respect embodying as it does the health and wealth of the people.



CHAPTER XXXV.

WHAT TO DO AND HOW TO DO IT.

THE combination of producers and consumers for their mutual interest may be readily brought about in most localities. The material for the formation of such an union abundantly exists in all directions, and is readily available, while the beneficial results that would arise from the co-operation of the agricultural and industrial classes for the pecuniary advancement of their individual interests are of so marked a character, that the questions of "What to do" and "How to do it," if once brought under serious consideration by the leading minds of both classes, could not fail in promptly bringing about a mutually advantageous working understanding.

At the outset, it will be seen that the subject is surrounded with the elements that embody the germs of success. Farmers have their produce to sell. Working men desire to purchase it, and have the cash to pay for what they require, while the money so disbursed upon

home-grown produce, remains in the country to be largely utilized in giving further employment to the working classes in other directions.

With this existing desire to sell and buy of each other, the essential point to be understood is the fact that the operations necessary to bring producer and consumer into direct communication as sellers and buyers are of a purely mechanical character. The food material exists in one direction, and the means wherewith to purchase it in another. The problem for solution lies in the provision of a ready means by which those who have particular commodities to sell, can be brought into contact with those who wish to purchase them for their individual requirements.

To accomplish this object, the numerous organizations that exist in connection with the agricultural and industrial classes, should utilize themselves—the former to take steps for the formation of a system of general and particular co-operation among farmers for the regular supply of the articles required as wanted; the latter should formulate a system well known and frequently practised by them, by which the requirements of purchasers may be ascertained and made known, and means of payment collected; while representatives of both should from time to time determine the means by

which the quality, character, and condition of all articles should be ascertained and mutually fix the prices at which they should be bought and sold, with due regard to what is equitable to both buyer and seller.

Faith and a regard for the interests of each other are the features to be recognized and acted upon. The element of a fluctuating price must be absolutely discarded, as being the obstacle that has tended to bring about the present disastrous condition of things.

The efforts generally made to get a little more than a thing is worth on the one side, and to buy it somewhat cheaper than its value on the other, is the great mistake by which both classes suffer.

A fairly remunerative fixed price for their produce is what farmers want, are entitled to, and would obtain, that is if they conducted their operations upon a sound, economic, and businesslike basis, with fixed prices according to quality ; the details of distribution can be readily simplified, systematically arranged, and practically carried out.

Without them everything is disjointed and leads to wasteful and extravagant expenditure in realization and distribution. With profitable results to farmers, the United Kingdom is suffi-

ciently large enough to provide all the animal and most of the cereal foods that the people require ; with the extension of agricultural operations that would be thus brought about, an abundance of employment would be created for the industrial classes in all directions.

It must not be thought for one moment that it requires a large effort to promote the organization of farmers, as it is quite the reverse, for the movements are all small in character, and each self-contained ; it is the multiplication of the small efforts that in the aggregate form the large one. Seven members subscribing for a one pound share each, which may be paid at the rate of three pence per week, can at any time form a society ; and it is on this basis that the major part of the industrial societies have been formed. These have now grown until they have reached to be 1432 societies, have an available capital of 12,000,000/. sterling, and make purchases yearly to the extent of 34,000,000/. sterling. Each society has its own rules and management, and is in no way interfered with ; but all are affiliated into a common union, each society paying the fee of twopence yearly for each of its members. In a further chapter, the rules will be found for the formation and conduct of a society.

CHAPTER XXXVI.

HOW TO COMPETE SUCCESSFULLY.

WITH practical economic and scientific working, so that the full advantages are taken of the natural position they occupy, farmers can profitably compete with imported foreign-grown foods. The matter is not one requiring the farmer to take less than he now receives or the consumer to pay more than he now pays.

It is one for the special and definite adjustment of a wasteful and extravagant system, which would enable the one party to receive more than at present for his produce and the other to pay less than he does now for his food.

As an illustration of the working out of the system, let it be assumed, for instance, that 6*d.* per pound be taken as the average wholesale rate for fair English beef, exclusive of offal. That is a price that, except upon a few occasions, farmers have not received during the present century, nor are likely to receive for many years to come. Yet the working classes throughout the country would hail with pleasur-

able delight the prospect of buying fair quality English beef at the average all-round retail price of 7*d.* per pound.

The result of these prices would be that the owner of a beast dressing 90 stone or 720 lbs. to the carcase would receive 18*l.* for the meat alone and 3*l.* for the offal, making in all 21*l.*, from which deduct 1*l.* for slaughtering charges and commission on its sale, this would leave a net sum of 20*l.*, a considerably larger amount than any farmer has been in the habit of receiving for a moderate-sized animal for some time past.

Further, by the sale of the meat to consumers at an average of 7*d.* per pound, it brings 21*l.*, which gives the sum of 3*l.* as a margin for carriage, shrinkage in drafts on weighing, and the working expense of butchering, an amount that, with any reasonable district trade, would leave a large balance in hand after all working charges were paid, which would be the butchers' profit, or if sold by a co-operative store, under an organized system of working might be distributed equally and rateably between the sellers and buyers upon such a basis as they might determine upon.

But in addition to the amount thus realized, 3*l.* has been set aside as the price of the offal,

that being its approximate value in the crude state in which it is dealt with at present, but by following a wiser and more legitimate course of realization a much larger amount may be received.

The hide, tongue, and tail at present realize their full value, but the head, heart, feet, tripe, fat, and some other portions, could be utilized to much better advantage than they now are.

They are convertible into prepared meat of numerous descriptions that are at present largely imported, or made into varieties of sausages, brawns, soups, and other "small goods" that sell readily at good and high prices, according to the district where they are sold, and it is by the mechanical conversion of the coarse joints and edible offal while fresh into saleable commodities of a recognized character which the public, from their knowledge of the mode of preparation, would have confidence in, that a much larger sum than the 3% would be realized by the farmer from those portions of their animals in addition to the sums named.

It must not be thought that any difficulty exists in carrying out such a course of procedure: the success of the dressed-beef trade in America

is largely owing to the manner in which the coarse meats and offal are utilized there.

These articles we import from America to the extent of about 1,000,000*l.* sterling annually, paying, as a wholesale price, 4½*d.* to 6*d.* per pound, our own Government also purchase largely of American compressed beef at same prices, while the proportionate wholesale prices that fore-quarters of prime beef have realized in the market for our own farmers have not exceeded 4*d.* per pound, and in addition the offal has been sunk or given away.

Thus, it will be seen that by fixing a price for meat, sellers may receive more than they do at present, and buyers obtain better meat for less money.

Then, again, take wheat as a further illustration on the same lines. If farmers can be assured of 40*s.* per quarter for their wheat for many years to come, the cry of agricultural depression will be heard no more, and wheat will be grown in every direction.

On the other hand if working men can be assured of *pure unadulterated bread* from home-grown wheat at 5*d.* the 4-lb. loaf, they will indeed feel that the good time has come, and cheerfully purchase at the price. Yet 5*d.* the 4-lb loaf, according to the Highland Societies'

statement, give 49s. 9d. per quarter for wheat.

Why should not these prices of 5d. for the 4-lb loaf of good bread from home-grown wheat, with 7d. as the average all-round retail price for prime English meat, be taken as fixed prices between the producer and consumer, with the additional basis that the further beneficial results should be divided equally *pro rata* among those interested?

With the prices so fixed the conversion of cattle into meat and the distribution of the proceeds is a purely mechanical arrangement, with fixed prices the regular supply can be readily assured and the regular outlet determined upon and provided for.

Upon the same basis the conversion of wheat into bread is a still more mechanical arrangement; the result can be more accurately arrived at. The large number of flour-mills that are lying idle throughout the country can be utilized to grind the wheat, while the bakers with their ovens that exist in every district may be utilized to bake and supply the bread, both being remunerated by fixed rates of payment for the mechanical services they render.

Given these two points of departure for the completion of a movement satisfactory to both

parties, then the organizations in connection with each class could readily nominate representatives who would form a council that would have the confidence of the whole country, which would draw up the basis of a working plan by which the local producer in the agricultural districts would be brought into active communication with the local consumer in the manufacturing and mining districts.

The organizations that might nominate representatives on behalf of the agriculturists are the Royal and County Agricultural Societies of the three kingdoms, the Local Chambers of Agriculture, and the Farmers' Clubs.

On the part of the industrial classes, the existing organizations are the Trades' Council and Societies, the District and Local Co-operative Societies, the Temperance, Templars, Foresters, Odd Fellows' Lodges, and the Working-men's clubs.

Such a council by means of their respective bodies, would form the nucleus for bringing the two classes into harmony by the continuous exchange of views. They would lay the basis of working operations and nominate local executive committees to carry them out. They would at the outset take such steps as would enable the formation of at least one producing and

one consuming district, where the conclusions they arrived at could be practically put into operation, and the experience gained from it disseminated in all directions.

A council formed on the lines laid down would soon occupy a powerful position, being of a strictly non-political character, and embodying representative men of all parties and classes, it would become recognized as an authority upon all questions of social progress, and would perform a national service in bringing the various classes throughout the country into one common union of thought, resulting in the combined organization of the industrial, agricultural, and commercial classes, for the development of home resources and interests.

CHAPTER XXXVII.

MEAT DISTRIBUTION.

BY following the position of each party at present engaged in meat distribution, we shall see the advantages and disadvantages that they derive at every step from the practice of this system.

The farmer at present sends his meat to a neighbouring market, incurs the cost of driving and loss of time, also expenses in attending the market. The animal loses some weight, and if disposed of, it is sold to a dealer who buys at a price to leave him a profit, after paying all the costs and charges of its transmission to another market and also its realization there.

It is known that the beast will lose more weight, and this is an element that is taken into consideration. The weight of the carcase is invariably taken by guess. The farmer is certain not to be paid for any excess weight, but the dealer is more likely to have more meat than he pays for.

The so-called offal, which is of considerable

value, is "sunk." It may, and possibly does, form an element in the consideration of price ; but its value in a country market is very little, owing to the cost and expenses in connection with the collection and delivery of the small quantities, in which it can be supplied in each locality. In the small country markets the farmer is entirely at the mercy of the dealers. He must accept their price, or send his stock further on or home again, either course being attended with expense, while the animals lose weight and condition.

It will thus be seen that the farmer is in all instances at a disadvantage, as he must sell, while the dealer occupies a favourable position, and may either buy at his own price or not at all.

The remedy for this disadvantage will develop itself, by concentrating the slaughter of stock to a fixed spot in a county, where the animals can be collected at leisure, and stall-fed until they are required, when the farmer's position will be changed, and he will derive the following benefits :—

1st. His beasts will be in good condition when slaughtered ;

2nd. They will have gained instead of having lost in weight ;

3rd. He will be paid for the full weight of meat as shown by the scales ;

4th. He will also be paid for the offal, a large portion of which will be utilized while fresh as articles of food, instead of for manufacturing purposes, as at present ;

5th. While much that is now valueless, owing to the quantities being too small to prepare economically, will have an outlet and thereby be increased in value, from the simple fact that the larger quantity that accumulates can be inexpensively dealt with ;

6th. He will also save the time and expense of himself and his men in attending the markets ;

7th. He will avoid the payment of one or more profits and two or more commissions ;

8th. While his meat will be in a position to be sent direct to where it is required, and only one rate of carriage be incurred, instead of two or more as under the existing conditions of things.

The aggregate of these increased values, savings, and benefits cannot be less in any case than three pounds per beast ; under some circumstances it may be considerably more.

To the retail butcher in the suburbs of London the advantages are equally great. In the majo-

rity of cases he has to attend the meat market at five o'clock in the morning, is compelled to purchase a large quantity of meat that he does not require, for the sake of getting what he does; he has also to pay the cost of its transmission to his shop; or if he orders what he requires from a salesman, he has to take what is sent to him, and pay what he is charged. Many butchers in the outlying suburbs, who have a small trade, do not find it worth their while to attend Smithfield, and make their own purchases; on the whole their businesses are not remarkably profitable, and they would welcome any change.

While the farmers pursue the old system, the conduct of the meat trade has been rapidly changing in character. In olden times every butcher bought live stock, which he slaughtered on his premises, and thus supplied the requirements of his immediate locality, the residents of which in those days usually comprised so large a proportion of the well-to-do members of the trading community that furnished demands for all parts of the animals.

Matters have considerably changed in the London meat trade in recent times, in a great measure owing to the suppression of private slaughter-houses, on the one hand, coupled with

the large migration of the commercial and professional classes to the suburbs on the other. These causes have so materially altered the character of the butcher's business, that now a very large proportion buy their meat ready killed.

The requirements of the butchers' customers vary with the respective districts, and also with the days of the week; this altered condition of things should be used by farmers and graziers for their own immediate advantage, which may be readily done by the concentration of slaughtering and provision of cool chambers, which would enable these requirements to be promptly met.

Thus, if a butcher in the West-end required a larger proportion of best roastings, one in the City a sole supply of steaks and chops, and an East-ender a quantity of second roasting or boiling pieces, by dealing at the farmer's abattoir each could be supplied with what they wished for, by which they would be able to avoid the loss, arising from having stock for which they did not have a ready sale, while the meat which they sold, having been retained in a chill-room or cool larder, where its condition had ripened, it would give their customers greater satisfaction.


In addition, the meat would be sent direct to the butcher's shop from the slaughter-house, by which one carriage only would be incurred, and many handlings avoided.

The customers would also know that the meat had been slaughtered under supervision, and was perfectly good and from healthy animals. The butcher would thus save time, trouble, and expense, and be supplied with what he required of a guaranteed quality at a fixed price, while those who took the whole of their meat from the slaughter-house would be placed in a position to establish such confidence with their customers that they would enhance the value of their business.



CHAPTER XXXVIII.

MEAT CLASSIFICATION.

HE sale and delivery of the meat thus slaughtered would be a very simple matter, if the details were regularly and systematically conducted upon fixed principles determined upon by independent parties in the interest of producers and consumers for the general management of the trade ; that is to say—

1st. That those managing the slaughter-house should classify all meat according to its condition and quality. This classification should be conducted by an independent staff of *employés* on such a basis as to satisfy both farmer, butcher, and the public.

2nd. The prices of the different grades of meat, and the various joints or portions of each grade, should be fixed at regular intervals (say monthly or semi-monthly) by independent means, if necessary, on such lines as would give both farmers and butchers a portion of the bene-

fits and advantages accruing from the savings of the system.

3rd. In each district the arrangements for the regular supply of stock for slaughter and conduct of the slaughter-house, together with the details of sale and delivery, should be under the control and direction of a committee of farmers and land-owners of the locality.

4th. The conduct of all business-matters should be made at a central office in London. This office—its books and staff under the control of the several farmers' committees, aided by commercial experts—would receive all orders from butchers and others, for the purchase of meats, make all the necessary railway and delivery arrangements, receive all cash, and issue the instructions for the despatch of meats.

5th. At such an office could be transacted the financial and commercial business for several counties, and for a specific charge perform a definite service. It would arrange for the regular sale of meat by the—

1st. Establishment of definite agencies, with existing retail butchers, and with co-operative stores.

2nd. By contracting to supply the whole or a portion of the daily requirements of public institutions, restaurants,

coffee-taverns, hotels, clubs, shippers, and other large consumers.

3rd. By the sale and direct delivery of special baskets of meats in joints, at fixed weights and prices to co-operative stores for their members, and the *employés* of large industrial establishments.

The arrangement for a regular and extensive outlet that can be thus made on the basis of fixed prices, for defined qualities, would create a continuous business that would allow of the regular feeding of live stock, until required for slaughter, would bring about the advantages previously named, and so enroll in one compact organization, the farmer, the butcher, and the consumer.

The aggregate saving effected in the shrinkage of meat by the avoidance of travelling is enormous, for it is well known that a beast will lose at least eight pounds per day when off the farm. Taking only three days as the average delay intervening between the departure from the farm to its slaughter, it will be found that the loss of meat that each animal has sustained by shrinkage is 24 lbs.

It is a remarkable feature in the characteristics of our farmers' disposition, that they have

permitted the existing state of things to continue, as they are certainly well known to all parties, inasmuch as they have been fully described and dilated upon by every Royal Commission or Parliamentary Inquiry that has been held on markets, cattle, agriculture, and kindred subjects for the past forty or fifty years. It may be taken for granted that until the matter is taken in hand and done for them, our farmers will do nothing to help themselves.

An amount calculated upon the aggregate supply shows that there is from this source alone an annual national loss of 23,500 tons of meat, valued at 1,250,000*l.* in money that should be in the pocket of the farmers as additional profit. The sums thus actually wasted by the existing inexcusable dribbling system of meat-selling that our farmers practise is 8,250,000*l.* per annum on beef cattle alone; that from sheep and pigs, which forms about nearly the same weight, would make the loss nearly 14,000,000*l.*, an amount sufficient in extent to convert the grazing branch of our great national agricultural industry, from one of the most depressed, into one of thriving and prosperity, and at the same time furnish a large addition to the wages sheet of the nation's

workers, and materially increase the available food supply for their wives and families.

Looking at the various circumstances, referred to it will be seen that the isolated system, upon which our farmers work, renders the various losses imperceptible and inappreciable, but combination will make them clear, and at the same time remedy the defects of the whole.

It will be found that the measures herein referred to may be readily, inexpensively, and profitably brought into active practical existence, while the larger the system of working can be adopted the simpler in operation it becomes. This has been found to be the case in America, where the "Dressed Beef" business, which is of comparatively recent introduction, has, owing to its inherent advantages, successfully competed with the livestock trade, and the "cattle-men" not only make more money for their stock, but the prices of meat in many of the large cities of the east, which have been thus supplied by the new system, have been reduced fully twopence per pound to customers.

CHAPTER XXXIX.

COOKED-MEAT TRADES.

VIEWING all the surrounding circumstances, so far as meat is concerned, the system that presents itself as best suited to home requirements, and capable of a ready and wide utilization is the one carried out in Australia and New Zealand, where establishments are formed at which a definite work is mechanically done at a fixed rate; and even in some of our large towns abattoirs have been erected by the authorities, who provide the staff for slaughtering the animals and dressing the carcasses at a fixed rate.

But the essential requirement is the general establishment in grazing districts of slaughter-houses with refrigerating chambers and appliances for the utilization of the edible offal while fresh, coupled with facilities for the preparation of the boiling joints, and the proper treatment of refuse; these would at once place farmers in an improved position, by giving them the bene-

fits derivable by those engaged in the meat trade abroad.

The enormous advantages that would thus accrue to farmers, by the concentration of slaughtering and preparation of the boiling joints of meat in forms that are acceptable to the public, will be more readily understood from an explanation of the description and weight of the available coarse joints of mutton and beef respectively, by noting the uses to which they can be applied, and the possible prices that may be received for them if properly dealt with. The breast, neck, and trimmings from mutton will weigh about sixteen pounds from each 70 lb. sheep, while the flanks, briskets, neck pieces, legs, &c., from beef will average about 250 lbs. from each 800 lb. carcase the average wholesale value of these portions of the carcase in accordance with the prices paid for live stock or dead meat is about threepence per pound.

These meats can be prepared for consumption in various forms, and, if under the supervision of a recognized health officer, might be specially disposed of in definite directions at much higher prices than farmers at present receive for them.

It should be remembered that all parts of an animal are equally nutritious, but the low prices ruling for boiling joints arises principally from

the small demand for them, owing to the general absence of facilities for cooking, or a want of time and knowledge as to the best forms of preparation by the working classes.

The average wholesale price for fore-quarter meat of prime quality, which forms the bulk of the boiling joints of beef, does not exceed four-pence per pound.

The striking difference to be gained by farmers from an improved system of procedure will be gathered from following the course of the cooked-meats trade, as carried on throughout the country.

This is divided into two classes, viz. that prepared abroad and imported as preserved meats, and that prepared at home and sold in numerous forms.

The wholesale value of the imported meats reaches one million and a half pounds sterling per annum, the retail price being estimated at two millions sterling.

The supplies arrive from America, the colonies of New South Wales, Queensland and New Zealand, and South America. The shipments from America consist principally of compressed corned beef, with some soups; those from the colonies mostly boiled beef and mutton, and some compressed beef and mutton; while from

South America the shipments are nearly all ox tongues.

The compressed corned beef, which is prepared from the poorest and commonest meats, mostly offal, is largely sold in poor districts in small quantities out of the tin at about 8*d.* per pound. The prices of the other meats and soups vary to a great extent from 6*d.* to 8*d.* per pound, in tins of from six pounds to two pounds in weight.

It will be readily seen that the boiling joints of our home-grown meats which do not reach these prices might, with much advantage to our farmers, compete in the supply of cooked meats prepared and sold in the same form as those imported meats.

This could be successfully done, as the expensive costs of tinning and cases would be avoided, owing to the producing districts being in close proximity to the centres of consumption.

The trade in home cooked meats, materially differs from the imported meat trade, being divided into three classes, viz. that of the poorer, the middle, and the upper classes.

The supply to the poorer class, is prepared either from the refuse of the markets, or from meats that dare not be shown there, &c., and com-

prises spiced beef, brawn, collared head, German sausages, and other goods which are made in the East-end of London, and disposed of to chandlers' shops, who in turn retail the meats in small quantities at about 8*d.* per pound ; and also in sausages, faggots, and saveloys, sold by tripe-dressers and low-class butchers.

The middle-class trade consists of boiled corned beef, spiced beef, collared head, potted head, brawns, German sausages, meat pies, and portable soups. These are sold at the ham and beef shops throughout the metropolis, the prices ranging—for boiled beef 1*s.* 4*d.* per pound spiced beef, brawn, and collared head from 10*d.* to 1*s.* 2*d.* per pound ; German sausages, 10*d.* to 1*s.* 2*d.* per pound ; and soups 2*s.* to 2*s.* 6*d.* per quart.

The upper-class trade is carried on by the large West-end confectioners, Provision-houses and Italian warehousemen, the articles they sell being pressed beef, rolled beef, galantines, brawns, sausages, meat pies, and soups. The prices at which most of these goods are sold is 1*s.* 9*d.* to 2*s.* per pound.

It will thus be seen that the boiling joints of meat, if properly prepared in known forms, have a large and ready sale in all directions, at prices considerably higher than those paid to farmers,

and that the outlet for them is practically unlimited; also, if they can be specially brought under public notice in a form that their quality can be guaranteed and cannot be imitated, the consumption would increase with the progress of public confidence in the character of the meats used.

As to fresh meat, instead of being sold as at present by the sides or quarters, it should be divided into the three grades of first, second, and third classes of joints, each of which could, if required, be sold by itself; by this means facilities would be given for retail butchers and co-operative stores, and even consumers in combination to purchase for their special trade or other requirements direct from the abattoirs.

By the concentration of slaughtering the waste and deterioration of flesh in travelling cattle would be avoided, means for the utilization of the so-called offal would be furnished, and thus meat, while being sold to consumers at a largely reduced price, would prove of a better quality and yield the producers a much greater sum than they at present receive.

The weight and value of the various parts of a beast may be approximately seen by the *pro forma* classification Account and estimate

of a bullock yielding an 800 lb. carcase of dressed meat, which is as follows :—

1st Grade . Fore ribs . 72 lbs.	}	equal 452 lbs. at 9d.	£ s. d.
„ . Loin . 92 „			
„ . Rump . 60 „			
„ . Top side . 60 „			
„ . Top rib . 64 „			
„ . Back rib . 76 „			
„ . Aitchbone . 28 „	}	equal 188 lbs. at 6d.	4 14 0
2nd Grade. Thick flank 40 „			
„ . Brisket . 52 „			
„ . Flank . 28 „			
„ . Silverside . 52 „			
„ . Suet . 16 „	}	equal 160 lbs. at 3d.	2 0 0
3rd Grade. Neck, clod, &c. 96 „			
„ . Skin, legs, &c. 64 „			
Total meat, 800 lbs.			<u>£23 13 0</u>

Perfect evidence of the reckless and negligent manner in which the farmers conduct their business is to be found in the manner in which the offal is dealt with. This is invariably “sunk.” That is to say, that in the sale of animals at so much per stone, the estimated weight of the carcase of meat is calculated only, the weight of the offal being estimated and deducted from the gross live weight and no charge made for it. The average value of the offal of a bullock in London is 3*l.*, and doubtless the dealer in a bare market will take that amount into consideration in the price he pays.

The total weight of the offal averages 465

pounds, and it is divided into three classes as under.

The classification and value of the offal, with a view to its utilization and manufacture being:—

	lbs.		£	s.	d.	£	.
(1)	77	Hides . . .	1	6	3		
	90	Fat . . .	0	14	0		
	—		<hr/>			167 lbs.	2 0 3
(2)	6	Tongue . . .	0	3	6		
	3	Tail . . .	0	1	0		
	10	Kidneys . . .	0	5	0		
	—		<hr/>			19 lbs.	0 9 6
(3)	30	Head . . .	0	3	0		
	9	Heart . . .	0	1	3		
	30	Liver and lights	0	1	6		
	150	Tripe . . .	0	2	6		
	20	Legs . . .	0	1	0		
	40	Blood . . .	0	1	0		
	—		<hr/>			279 lbs.	0 10 3
			<hr/>				
		Total .	465 lbs.	£3	0	0	

NOTE.—The estimate for offal is based upon the prices at present realized. With improved facilities for utilization they are capable of increase to the extent of 30s. to 40s. per bullock.

From the above it will be seen that the actual value of 279 lbs. of edible offal which, when cleaned and dressed, would yield 150 lbs. of nutritious boneless foods, at the ordinary current price which is paid for it is but ten shillings and threepence, showing an enormous gross waste in value upon each animal, which is owing almost entirely to the disorganized

system in which the different parts are disposed of.

The aggregate quantity of offal that would be available by a concentration of slaughtering, would enable arrangements to be made, by which it would be converted into food while fresh, instead of being to a large extent wasted by being applied to manufacturing purposes. This especially applies to the large quantity of fat referred to in the first class, that at present is either sold at a nominal price to the soap-maker, or is collected and sent to Holland for conversion into margarine, in which form it is re-imported and disposed of at a greatly increased price. From the hides, that also form a portion of the offal, and included in the same class, a considerable advantage is derivable by concentrated slaughter, as the quantity would allow of their being tanned on the spot, and the cost of carriage, which is at least five shillings on each, would be saved. Further, the number dealt with allows of the employment of skilled dressers, by which the gashes and flaws are avoided. The loss from this readily preventible cause is remarkably large. In the city of Glasgow alone, it is estimated that the damage to hides by inexperienced or negligent flaying, exceeds 20,000*l.* annually.

The second class, comprising the tongue, tail, kidneys, and heart are readily saleable in their distinct forms, and the following is a list of some goods capable of being made at public abattoirs from the third class of the so-called offal, those marked * being at all times in large demand, and saleable at good prices,—

Ox palates,	Essence of meat,	Mulligatawny soup,
Sweetbreads,	*Beef tea,	Vermicelli soup,
Brawn,	Glaze,	Macaroni soup,
*Potted head,	*Collared head,	Gravy soup,
*Bologna sausages,	Dripping,	Julienne soup,
*German sausages,	Plain tripe,	Mutton broth,
*Oxford sausages,	*Oxtail soup,	Scotch haggis,
*Sausage meat,	*Oxcheek soup,	Hotch potch,
*Minced collops,	Kidney soup,	*Jellies.

Sweetbreads, hearts, tripe, and palates provide many dishes that are largely to be found in the French and German cuisine; in addition to which there are several valuable manufacturing products obtainable from the residue, such as neat's-foot oil, fat, dripping, bone-dust, &c.

The supply of meats prepared in this form must create a demand, and so act favourably on the trade generally and lead to profitable results. The meats thus made up in various forms would speedily win public confidence and lead to the creation of special outlets so as to be readily disposed of.

1st. By specially recognized agents who have

shops and are willing to utilize a portion of them and their services for the purpose on mutual terms.

2nd. At hotels, luncheon-bars, working-men's clubs, &c., eating-houses and coffee-taverns.

3rd. At Co-operative stores, industrial dwellings, and public institutions.

4th. Meats prepared ready for cooking could be supplied to schools, clubs, workshops, and in all directions where a large number of consumers are congregated, either indoors or out of doors.

The large amount of fresh bones that thus would become available would enable them to be dealt with in steam digesters, by which the whole of their highly nutritive constituents can be extracted, and a yield of a great quantity of rich soup obtained.

This supply of fresh boiling joints will enable a new trade to be opened up for the provision of beef teas, soups, broths, and other foods for invalids at prices that will bring them within the reach of the middle and working classes.

At present the preparation of these articles by private persons at their own homes is comparatively small, and those made up in quantities for trade purposes are sold by chemists at prices which practically place

them out of the reach of the bulk of the people. Large quantities of extract of meat are prepared abroad from wild cattle and imported for home sale and consumption. Medical authorities do not agree as to the nutritive value of the so-called "extracts of meats," but there is no division of opinion as to the valuable nutritive properties of good old-fashioned beef tea.

A bountiful supply of nutritious, savoury, and palatable invalids' food at reasonable prices cannot fail to bring those farmers who contribute towards providing the supply a very much larger aggregate return for their animals than can be otherwise obtained by them.

The appliances and utensils necessary for manufacture are of the simplest possible character, while the prices paid by consumers, after allowing for all cost and charges, and also for the shrinkage in preparation, are sufficient to more than double the value of a large proportion of each beast.

The concentration of slaughtering in the country on the lines suggested would also introduce several advantages to the districts where carried on, that may be referred to as worthy of much consideration.

1st. It would retain a large amount of valu-

able refuse manure for local utilization at little cost.

2nd. It would develop several new industries in each district that would employ a large proportion of the unskilled labour always to be found in agricultural districts.

3rd. It would provide and place within the reach of the working-classes a large amount of cheap and nutritive foods that cannot at present be obtained in agricultural districts.

4th. It would lead to the preparation of the coarser joints of meats in a form that would make them more available for general consumption, and enable them to realize far better prices than they now do.

The prices of perishable foods may be effectually reduced by simplifying the systems of distribution, so as to bring producers and consumers into more direct contact, in order that the numerous expenses, charges, and profits incidental to indirect transmission and superfluous middlemen may be avoided.

A combined movement once in successful operation in connection with meat would lead to further developments in the same direction. Butter, cheese, milk, fruit, poultry, and in short every article of food that our farmers produce, is capable of being beneficially dealt with to the advantage of the producer and consumer.

CHAPTER XL.

SIMPLE BOOK-KEEPING.

THE various forms and books that would enable the transactions of the business as set out, to be simply, accurately, and expeditiously conducted, are as follows :—

Form No. 1 is the advice note that the farmer would forward with the animals, when he sends them to the abattoir for slaughter, each animal being entered separately, and described by a number.

TALLERMAN'S IMPROVED SYSTEM OF MEAT DISTRIBUTION.
No. . Form 1.
Farmer's Advice Note.
To the Manager Branch,
The Meat Agency.
Herewith I forward you in good order and condition, Bullocks,
Cows, Sheep, Pigs, for slaughter and realization on my
Account. Please to hold same covered by insurance against all risks
and place the proceeds to my credit at Bank in due course.
Sender's Name
Address

Date	1889.	
<hr/>		
No.	Description of Animals.	Remarks.

Form No. 2 is the receipt to be given by the manager at the abattoirs, upon the animals being handed over for feeding or slaughter; it will be seen that this form contains two numbers to each animal, that from the farmer's advice note and the rotation No. of its receipt at the yard, by which it is entered in the books, from which number and entry the course of the realization of every part of an animal may at all times be traced. This document also contains the live weight of each animal separately.

TALLERMAN'S IMPROVED SYSTEM OF MEAT DISTRIBUTION.

No. . Form 2.

Branch Manager's Receipt.

To Esq.

I have received from you, apparently in good order and condition, Bullocks, Cows, Sheep, Pigs as per particulars below, for slaughter and realization on your Account, which have been insured against all risk in the sum of £ , the premium being debited to your Account. These animals shall have attention in due course.

Manager.
Branch,
Meat Agency.

Date1889.

Advice No.	Yard No.	Description.	Live Weight.	Remarks.
------------	----------	--------------	--------------	----------

Form No. 3 contains the particulars of the animal's yield after slaughter, with the names of those by whom it was slaughtered, dressed, weighed, and valued, together with details of the weights of the carcase, fat, tongue, head, tripe, offal, hide, &c., with such remarks as may have been found necessary to make, and the description of the deliveries that have been made of meat, fat, hides, and all other portions and the prices and directions at which they were severally disposed of, duly vouched by the manager and chief clerk. This return is sent to the central office.

TALLERMAN'S IMPROVED SYSTEM OF MEAT DISTRIBUTION.

No. . Form 3.

Dead Weight Returns.

Animals forwarded by . Slaughtered and dressed at
Branch. Dressed by . Valued by . Weighed by .

Date		1889.					Manager.	
Yard No.	Carcase.	Quality.	Fat.	Tongues and Kidney.	Tripe, Offal, &c.	Hides.	Remarks.	

Delivered as under :—

To

Depôt

sides

lb. @

To

Do.

lb. @

To

Do.

lb. @

Fat

lbs. as per contract.

Hides

lbs.

,,

Examined and certified as correct.

Manager.

Chief Clrk.

Form No. 4 is the receipt that would be sent with the meat or other material from the abattoir to the depôt, retail butcher, or other buyer, for signature and return, thereby furnishing a voucher for the proceeds of each animal.

TALLERMAN'S IMPROVED SYSTEM OF MEAT DISTRIBUTION.
No. . Form 4.

Buyers' Receipt Note.

Received from	Slaughterhouse.
Sides Beef . . weight	Total lbs.
Carcases Mutton „	
„ Pork „	
Sundries as per List	
Dated	1889.

Yard No.	Description.	Quantity.	Weight.	How Disposed of.
----------	--------------	-----------	---------	------------------

Examined and found correct.

Manager.
Chief Clerk.

Forms No. 5, 6, and 7.—These comprise statements of the particulars of sales of beef, pork, and mutton, made by butchers or co-operative stores in London or the country, in accordance with special arrangements with the Central Office, by whom the orders and cash from the buyer have been received; by this means the Central Office in London can receive orders

with cash from any part of the country, and issue instructions to have the meat delivered from the slaughter-house, butcher's shop, or co-operative store nearest to the customer.

TALLERMAN'S IMPROVED SYSTEM OF MEAT DISTRIBUTION.

No. .

Form 5.

Branch Depôt.

Account Sales

Sides Beef sold for and on account of

slaughter-house, received

as per receipt note No. .

Yard No. .

Accountant.
Manager.

Date 1889.

	Particulars of Deliveries as per Order.	£	s.	d.
lbs. Fore Rib .				
„ Sirloin .				
„ Rump .				
„ Topside .				
„ Thick Flank .				
„ Brisket .				
„ Top Rib .				
„ Back Rib .				
„ Flank .				
„ Silver Side .				
„ Aitch Bone .				
„ Gravy Beef .				
„ Shin and Legs .				
„ Suet .				
Total .				

Explicit Book-keeping.

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TALLERMAN'S IMPROVED SYSTEM OF MEAT DISTRIBUTION.

No. .

Form 6.

Branch Depôt.

Account Sales Carcases Mutton sold for and on account
of slaughter-house. Received as per receipt note No. .
Accountant.
Manager.

Date 1889.

		Particulars of Deliveries as per Order.	£	s.	d.
lbs.	Hind Quarters				
„	Fore Quarters				
„	Legs . .				
„	Loins (not trimmed) .				
„	Shoulder .				
„	Neck . .				
„	Breasts . .				
	Total . .				

TALLERMAN'S IMPROVED SYSTEM OF MEAT DISTRIBUTION.

No. .

Form 7.

Branch Depôt.

Account Sales Carcases Pigs sold for and on account of
slaughterhouse. Received as per receipt note, No. .
Yard No. .

Accountant.
Manager.

Date 1889.

		Particulars of Deliveries, as per Order.	£	s.	d.
--	--	--	---	----	----

Forms No. 8, 9, and 10 comprise the account sales of the meat and the offal of the bullocks, sheep, and pigs respectively, from which it will be seen that while the meat from the animals is dealt with, if necessary, in parts, those of the offal of each class of animal are dealt with together.

TALLERMAN'S IMPROVED SYSTEM OF MEAT DISTRIBUTION.

No. . Form 8.

Account Sales for Bullocks slaughtered, dressed and sold at
the Branch of the Meat Agency, for and on account of
Date 1889.

Your Advice No.	Yard No.	Description.	Quality.	Live Weight.	Dressed Weight.	Price.	Total
--------------------	-------------	--------------	----------	-----------------	--------------------	--------	-------

Offal :—From animals at each.
Hides, Rough Fat, Suet, Tongues, Kidneys, Heads, Heart,
Feet, Liver, Tripe, and Sundries.

Disbursements :—
Railway Freight
Insurance
Feeding
Driving
Weighin
Slaughtering
Delivery, Meat
Do. Offal
Cartage

Charges :—
Commission on Meat 2½ per cent. on £ : : = £
Do. on Offal 5 „ £ : : = £
To Cheque on Account £
To Cheque herewith £
£

TALLERMAN'S IMPROVED SYSTEM OF MEAT DISTRIBUTION.

No. . Form 9.

Account Sales for Sheep slaughtered, dressed, and sold at
the Branch of the Meat Agency for and on account of

Date 1889.

Your Advice No.	Yard No.	Description.	Quality.	Live Weight.	Dressed Weight.	Price.	Total.
--------------------	-------------	--------------	----------	-----------------	--------------------	--------	--------

Offal :—From animals at each.
Skins, Rough Fat, Kidneys, Heads, Hearts, Feet, Liver,
Tripe, and Sundries.

Disbursements : —
Railway Freight
Insurance
Feeding
Driving
Weighing
Slaughtering
Delivery, Meat
Do. Offal
Cartage

Charges :—
Commission on Meat 2½ % on £
Do. on Offal 5 % on £
To Cheque on Account £
To Cheque herewith £

TALLERMAN'S IMPROVED SYSTEM OF MEAT DISTRIBUTION.

No. .

Form 10.

Account Sales for Pigs slaughtered, dressed, and sold at
the Branch of the Meat Agency for and on account of

Date 1889.

Your Advice No.	Yard No.	Description.	Quality.	Live Weight.	Dressed Weight.	Price.	Total.
--------------------	-------------	--------------	----------	-----------------	--------------------	--------	--------

Offal:—From Animals at each.
Rough Fat, Kidneys, Hearts, Feet, Liver, Tripe, and
Sundries

Disbursements:

Railway Freight
Insurance
Feeding
Driving
Weighing

Slaughtering
Delivery, Meat
Do. Offal
Cartage

Charges:—

Commission on Meat $2\frac{1}{2}\%$ on £
Do. on Offal 5% on £
To Cheque on Account £
To Cheque herewith £

From the above it will be seen that all a farmer has to do, is to send his animals to the abattoir, and obtain the receipt for them, which he sends by post to the Central Office, when he receives at once a payment on account for about the current value, and a few days after, upon the slaughter of the animals being complete, he would receive account sales for meat and offal, and a cheque for both in settlement, and full particulars of live and dead weight—quality and condition of his animals being fully described—and an actual independent check being rigidly maintained upon all details owing to the duties of the employés being simply mechanical and isolated.

TALLERMAN'S IMPROVED SYSTEM OF MEAT DISTRIBUTION.														Form 11.											
No. .		Cash Sales		Branch		day, the		188		Examined		Cashier.		Auditor.											
BEEF.														MUTTON.											
No. of Ticket.	Rump Steak 1s.	Beef 10d.	Sir-loin 10d.	Fore Ribs 10d.	Whole Rump 10d.	Thick Flank 9d.	Top Side 9d.	Silver Side 8d.	Top Ribs 7d.	Back Ribs 7d.	Gravy Beef 7d.	Alch Bone 6d.	Bris-ket 6d.	Flanks 6d.	Suet 6d.	Stock Meat 4d.	Leg Beef 3d.	Legs 10d.	Hind Qtrs. 9d.	Shoulders 8d.	Loins 8d.	Breasts 5d.	Sausages. 4d.	Sundries.	Total. £ s. d.
1																									
2																									
3																									
4																									
5																									
6																									
7																									
8																									
9																									
10																									
TOTAL																									

TALLERMAN'S IMPROVED SYSTEM OF MEAT DISTRIBUTION.															Form 12.									
No.		Cash Sales		Branch		day, the		188		Examined		Cashier.		Auditor.										
BEEF.															MUTTON.									
No. of Tickets.	1s.	10d.	9½d.	8d.	7½d.	7d.	6d.	6d.	4d.	3½d.	10d.	9d.	8½d.	8d.	6½d.	5d.	Sausages.	Sundries.	£ s. d.	Remarks.				
1																				1				
2																				2				
3																				3				
4																				4				
5																				5				
6																				6				
7																				7				
8																				8				
9																				9				
10																				10				
TOTAL																								

Form No. 15 is an order from a customer to either the central or local office as may be arranged, and Forms 13 and 14 are instructions from central or local office to the abattoirs to despatch the meat required direct to the buyers.

TALLERMAN'S IMPROVED SYSTEM OF MEAT DISTRIBUTION.

No. . Form 13.

Instructions from Central Office.

To Branch.

Forward the undermentioned order to the respective parties as per instructions, advising same direct, and return particulars here, that they may be invoiced in due course.

Manager.

Date1889.

Weight.	Description.	Price.

TALLERMAN'S IMPROVED SYSTEM OF MEAT DISTRIBUTION.

No. . Form 14.

Order Advice from Local Agent.

To Local Depôt.

Forward the undermentioned orders to the respective parties as per instructions, advising same direct, and return particulars here that they may be invoiced in due course.

Agent.

Date1889.

Weight.	Description.	Price.

TALLERMAN'S IMPROVED SYSTEM OF MEAT DISTRIBUTION.

No. Register. Date of last deposit. Form 15.
To the Manager Branch.
The Meat Agency.

Please send to my address on day next the following goods,
and debit the invoice, cost, and carriage to my deposit account with
the Meat Agency.

		Name	Address
Date	1884.		
Weight.	Description.	Price.	(For use at Office.)

Form 16 is a special form of order where a customer has a deposit account.

TALLERMAN'S IMPROVED SYSTEM OF MEAT DISTRIBUTION.

No. Register. Date of last deposit. Form 16.
Value not exceeding
Charged against Deposit Account.

Cashier. Secretary.
To the Manager Branch.
The Meat Agency.

Please send to my address on day next the following goods,
and debit the invoice, cost, and carriage to my deposit account with
the Meat Agency.

		Name	Address
Date	1884.		
Weight.	Description.	Price.	(For use at Office.)

Form 17 is a retail price list for the guidance of butchers who deal with the Central Agency, and arrange to supply as its agents those of its customers who may reside in their districts.

TALLERMAN'S IMPROVED SYSTEM OF MEAT DISTRIBUTION.

No. .

Form 17.

The Meat Agency,

Leadenhall Market.

RETAIL PRICE LIST.

Beef.

				<i>d.</i>		<i>d.</i>
Leg Beef ...	...	...	...	3½	to	4
Stock Meat	...	...	...	4	„	4½
Brisket ...	...	...	...	6	„	6½
Flanks ...	...	...	...	6	„	6½
Suet ...	...	...	...	6	„	6½
Aitch Bone	...	...	...	6½	„	7
Gravy Beef	...	...	...	7	„	7½
Back Ribs	...	...	...	7	„	7½
Top Ribs ...	...	...	...	7½	„	8
Silver Side	...	...	...	8½	„	9
Top Side ...	...	...	...	9½	„	10
Thick Flank	...	...	...	9½	„	10
Fore Ribs...	...	...	...	10	„	
Sirloin ...	...	...	...	10	„	
Whole Rump	...	...	...	10	„	
Steak ...	...	...	...	10	„	1½

Mutton.

Hind Quarters	...	...	...	9
Fore Quarters	...	...	...	6½
Legs ...	...	...	...	10
Loins (not trimmed)	...	...	...	8
Shoulder ...	...	...	...	½½
Neck ...	...	...	...	6½
Breasts ...	...	...	...	5

Sundries.

Pickled Tongues ... 3/6 to 4/6

Form 18 is the selection and advice note sent with the order, that any complaints may be verified.

TALLERMAN'S IMPROVED SYSTEM OF MEAT DISTRIBUTION.
Form 18.

			No. 2.
WHEN EMPTY RETURN TO			
THE MEAT AGENCY,			
Leadenhall Market.			
<hr/>			
Weight	lbs.	Selected by	Packed by
<hr/>			

TALLERMAN'S IMPROVED SYSTEM OF MEAT DISTRIBUTION.
Retail Department.
The Meat Agency,
Branch.

Salesman.	Date.	Examined by
	No.	
<hr/>		

And the following additional Books in ordinary business form :—

- Inward { Deposit Receipt Book.
Consignment Book.
Ledger.
- Outward { Journal, Retail.
Journal, Wholesale.
Cash Book, Retail.
Cash Book, Wholesale.
Ledger, Retail.
Ledger, Wholesale.
- The Offal Manufacturer's Book.
- Contract Book.
- Address Book.
- Letter Book.

Upon examination it will be seen that the system as above propounded is the essence of simplicity in practical operation, which is owing to the isolation of the different departments, and the complete organization of each upon a mechanical basis, while the duties required are of the most commonplace nature, and may be readily performed by those engaged for them thus:—the reception and weighing of the animals may be effectively performed by an intelligent farm-labourer, the weighing of the carcase and other parts of the offal after slaughter is a service that all slaughtermen, who are usually butchers, are accustomed to. The collection of the different returns and their entry, as pointed out on the Societies' forms, with their despatch to the Central Office, and the delivery of the meats where required according to instructions, are services quite within the reach and ability of ordinary store managers. The financial and clerical arrangements, being carried out by the independent staff at the central office, are subject to an examination that furnishes an ample guarantee for the immediate detection of any irregularity, and must prevent the practice of pilfering, that is almost inseparable from the system of meat disposal as at present conducted, and, in fact, from any

business where ready money is passed about freely without check.

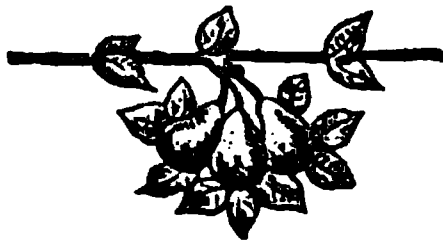
Forms Nos. 11 and 12 are statements by which a retail shop doing a large or small business may be systematically checked by a double-entry system of working accounts and scales. From the nature of its compilation it is quite possible to check a current business at a moment's notice without any interruption to the trade or staff.

In practice a clerk is in a desk at the side of the shop near the scaleman, who makes out the bill in duplicate, one for the customer, who takes it to the cashier and pays it, the amount being entered on form 11, the other bill with the meat being taken by a shopboy to the second scale-clerk, who, after weighing it against the items on the bill, delivers it, if correct, to the buyer upon presentation of the first bill receipted. The particulars of the sale bill being entered on the forms 11 and 12 in rotation, they can be added up at any time, when not only are the amounts of cash and the weight of meat shown, but should there be any discrepancy in the weight of meat with the stock received, the shortage may be traced to the particular joints of the carcasses.

To the uninitiated in commercial matters

the details set out may appear complicated, but in actual work they are the simple and ordinary measures, practised in every well-ordered business establishment in actual work.

An inspection of the forms by agricultural or industrial minds is calculated to lead to a feeling of bewilderment ; but the commercial mind will grasp the simplicity of the whole matter at a glance. This will be readily understood from the fact that those engaged in commercial pursuits are acquainted with the work done at the banks, the Railway Clearing House, the docks, railways, post-office, shipping-offices, &c., the whole of whose complicated transactions are speedily and accurately carried out by means of the simple forms that are in use.



CHAPTER XLI.

WHEAT.

WHEAT, the basis of bread, ranks in equal importance with meat, as an article of food, and it will be found upon examination that, by pursuing a rational and reasonable commercial course in its distribution, British farmers might profitably engage in its production notwithstanding the competition of foreigners. In view of current general opinion this may appear a wild statement, but upon inquiry it will be found to be strictly accurate, and farmers once satisfied upon that point, it will also be discovered that there is ample land available for a much larger production of the bread-stuffs that the population require than is at present cultivated for the purpose.

The actual relations between agriculturists and the public in connection with home-grown wheats and the real reason for the importation of foreign wheat appears to be but little understood, but they may be partially gathered from

some curious facts that have been recently brought to light.

In 1886 the council of the Highland and Agricultural Society of Scotland appointed a large and influential committee of its members to examine into and report upon the relative prices received by producers and paid by consumers. This committee's report, which is of a most exhaustive character, was published in the volume of the Society's transactions for 1887, and includes the following statement respecting wheat :—

“The average of the prices which the thirty-two producers who answer the first query, report that they have received is 29s. 7d. per qr. The average yield of fine flour from a quarter of wheat, weighing 63 lbs. per bushel, is said, taking the average of the five informants who report, to be 359 lbs., enough to make 119 four-pound loaves. The bran and second flour obtained in the manufacture of wheat into flour is sufficient to pay all milling expenses, consequently the cost of the flour required to make a four-pound loaf is 3d. The price of the four-pound loaf during the twelve months of the inquiry has been rather above than below 6d.”

In addition to this difference between the wholesale value of home wheat and the retail

value of bread, it should be understood that bakers use the flour from foreign wheats in preference to those of British growth, not because the supply of home-grown wheat is short, but because they can obtain so many more loaves out of a sack of flour made from foreign wheats. This excess is not due to the superior quality of the flour, because it is admitted that no imported wheats approach the mild, mellow, glutened wheats of England in flavour, colour, and other essentials requisite for the production of good bread.

The real fact is that the imported hard, or, as they are termed in the trade, "water-drinking wheats," will readily absorb so large a quantity of water that bakers can obtain at least 10 more 4-lb. loaves out of a sack of flour, made from it, therefore they prefer imported wheats, but assuredly the nutritive value of bread so made is not equal to that of the bread from English flour, and in the cases where it is used, the consumer pays for bread and is supplied with water, in fact parting with his hard-earned wages for what he does not receive, while the British farmer is subjected to an unfair competition with foreign-grown wheats, the results of the proceeding being equal to the indirect payment of a bounty or unnatural protection of

10 per cent. to the foreign-grower against the British farmer provided by the British public. This is a condition of things that cannot be too speedily or exhaustively inquired into, and those interested in home agriculture should make it their duty to see that the facts in connection with this important subject are effectively brought under public notice in order that one of the causes that lead to the infliction of serious losses to our farmers and the imposition of a great fraud on the public may be removed.

If the milkman who adds water to his milk be deemed guilty of fraud and punished, why should the baker who adds water to his bread go free? The view that is taken of the subject by the "trade" is clearly exhibited in the annexed extract from a report to the Secretary of State for India made by an eminent firm of wheat brokers upon some samples of Indian wheat.

Report on Indian Wheat by McDougall Bros., to the Secretary of State for India, December 15th, 1882.

No. 1, fine, soft white (lot 1).—Results of milling and baking prove it is an exceedingly good and useful wheat, the flour being great in quantity, of pure white colour and superior bloom, and with a slight beany flavour. . . . The yield of bread from it is very large.

Superior soft red (lot 2).—Result of milling and baking prove it is a good and useful wheat, the flour being great in quantity and of medium colour and strength, with a slight

beany flavour, and containing an average of gluten. . . .
The yield of bread is exceptionally large.

Average hard white (lot 3).—It is also a profitable wheat for millers, owing to its requiring $8\frac{1}{4}$ per cent. of water to render it sufficiently mellow for use. To this wheat and to the Indian average hard red (lot 4) must be awarded the distinction of producing more bread than any other flour, making it a baker's flour, as well as a miller's.

Average hard red (lot 4).—Results of the milling and baking prove it produces a common and dry strong flour in almost unequalled quantity. In colour inferior; a profitable wheat for millers, as it takes 7.6 per cent. water to render it sufficiently mellow for use.

By this it will be seen that imported wheats are recognized as good "miller's wheats," or "baker's wheats." The natural inference being that they are relatively bad "consumer's wheats."

Assuredly there must be something radically wrong in the system, that will permit such a state of things to continue when it will be found that our farmers are suffering from an illegitimate competition, and the people are being largely defrauded in the character of the bread they are supplied with.



CHAPTER XLII.

SOCIAL PROBLEMS.

UNQUESTIONABLY there is no subject that so largely affects the health and happiness of the whole people as an abundant supply of home-grown bread and meat at such prices as will at the same time bring them within reach of the working-classes, and furnish profitable results to the agriculturist. It is, before all problems, the one whose successful solution will carry with it that sound commercial result, for the industrial classes, by which it will not only provide the food for their living, but also the employment by which they can earn the means of procuring it.

There will not be wanting those leading minds devoted to agricultural pursuits, who will receive with incredulity, possibly with derision, the opinion thus expressed. To them it may be simply said that the whole course pursued by agriculturists in this country, in the realization of their produce is a thoughtless mistake, inasmuch as the natural protection with which

they are surrounded has never been utilized. For the past eighty-four years there has been a continual series of laments over the unprofitable character of agriculture and the serious depression under which it laboured. Those engaged in that industry, continually clamour for something to be given to them, but they have never yet made an effort to aid themselves, which they might readily, and profitably do.

“Reduce our rent, abolish our tithes, diminish local taxes, put five shillings a quarter on all wheat that arrives in the country,” implores the British farmer, while he sullenly stands idle and looks on, while farmers from all parts of the world, by the exercise of intelligence and industry, enter his markets, and supply his customers to such an extent, that even in the very heart of the agricultural districts of Suffolk and Kent the grocers’ shops are largely stocked with preserved meats and fruits.

Farmers, to arise to the position, must understand that as occupiers of the soil, they owe a duty to the nation, to extract from it the fullest possible amount of food supplies that the exercise of intelligence and industry will permit, and to place their produce within reach of consumers in the most economical and convenient forms. Until farmers have done this, they

have no claim for consideration of any kind ; on the contrary, the time may arrive when the country will express its wishes and impose the duty upon all farmers of conducting their operations with intelligence and common sense, and enforce its requirements by remitting taxes and other disbursements, from legitimately conducted organizations, and thus leave those who delight in ancient manners and customs, to enjoy them to their heart's content and pay for their pleasure.

The numerous authoritative inquiries that have been made, and reports that have been issued during that period by royal commissions and select committees of both Houses of Parliament when wheat was 70s., 65s., 55s. and 45s. per quarter, have at all times elicited the same opinion from agriculturists, that its production left a loss to those engaged with it. This condition of things must continue until farmers realize their true position, and act upon it by approaching and seeking the support of the industrial classes, as direct and definite customers for home-grown produce.

The course pursued by farmers in continually making attempts to procure a State bounty on their produce, at the expense of the working classes has led to an estrangement, between the

industrial and agricultural classes, throughout the kingdom, to the detriment of both, and the keystone to the termination of this condition of things is the general spread of the knowledge, how the mutual interests of each other are bound together, and the adoption of practical measures for putting them into active operation.

When once both the agricultural and industrial classes, can be made alive to that position, and conduct their operations in accordance with them, then the mournful cries of agricultural distress and trade depression will be heard no more in the country.

True it is that year by year the supplies of cereals from all parts of the world continue to increase, and enter into competition with each other in our markets, but they are fettered with conditions that entail heavy costs, charges and expenses for transport and sale, from which the home farmer is free. As with meat, so with wheat, the question is the system of distribution and realization. The proximity of the home producer to the consumer furnishes advantages that should be turned to account by both.

The subject must be looked at, understood, and dealt with from a purely commercial aspect. In that case it will be found that there is a point below which foreign producers cannot

dispose of their crops or stock except at a loss, and that is the figure at which they will stop sending their supplies. Viewing all the surrounding circumstances, the British farmer must concentrate his attention, to realize his wheat at a profit at that point, and this he may do by simplifying the system of its distribution, so as to avoid the waste of labour and material which at present takes place, and let his produce go to the public on its merits in a form suitable to their wants and means.

It is difficult to realize the fact that our farmers are part and parcel of the most enterprising commercial people in the world, and that the agricultural and industrial sections of the large body of people confined in the British Isles can be so completely dissevered in mind and thought. "Give us this day our daily bread," prays the British workman. "Here is your wheat, which I lose money by," sullenly complains the British farmer.

Let this state of things cease, and the exact requirements of the public be understood and provided for, rationally and commercially, then it will be clear to the farmer that his position as the natural producer of the food of the people is impregnable, and that a successful future is in store for him.

CHAPTER XLIII.

WORKING CLASS REQUIREMENTS.

THE working classes on all sides want bread daily, and notwithstanding the low price of wheat, they are now compelled to pay comparative excessive prices for it ; their interests are, and their sympathies would be, with British farmers if they were made fully acquainted with the position and the means by which they might be amended.

The constantly increasing importation of wheat and flour is gradually tending to lessen the quantity of land brought under tillage, and destroying the occupation of our millers.

This circumstance should be utilized for carrying out a mechanical arrangement with millers and bakers by which farmers could supply the people direct with bread made from home-grown wheat upon mutual terms that would prove to be beneficial to all parties.

Such an idea will, as a matter of course, be treated by the bulk of ancient farmers as a wild, impracticable theory. That is one of the rea-

sons why I have undertaken the thankless task of pointing out to them the illusion under which they labour. There are some of the class to be met with occasionally who do exhibit a desire to do something different, if they only knew how to set about it, they will doubtless say. "But how can I make my wheat into bread, and if I could, how could I sell the bread?" These are apparently insurmountable difficulties, but to those intelligent agricultural minds who exhibit a desire to think for themselves on the subject, I would refer the accompanying diagram of England and Wales, showing the industrial co-operative organizations that permeate the two countries, and are to be found in every county, and also the list of the different societies in the United Kingdom, with their addresses and the number of members to each. The total number of societies is 1452, the number of their members 945,619, and as nearly all the members have wives and families, the aggregate number of mouths to be filled amount to several millions. In these organizations will be found the nucleus of the system by which the British farmer may reach the British workman, who has a desire to buy his wheat, and would readily do so if it was offered him in the form of bread.

It is evident, from the ruling prices of wheat

and bread, that a working system by which the farmer would receive the current price for his wheat, according to its quality, and the workman paid the current price for his bread, that a large margin would be found to accrue.

This, after paying for the cost of manufacture and distribution, could be divided, one-half to the producers and one-half to consumers, in proportion to the individual transactions on each side, at regular intervals, say monthly or quarterly.

This principle of co-operation in buying is well understood and largely practised by working men in the mining and manufacturing districts of the provinces, and would rapidly develop itself there, if a few farmers in those localities would once combine to furnish the supply.

To deal with the subject from this standpoint, is not a matter of additional capital to be invested anywhere, for the farmer has his wheat and the working man pays cash for his bread.

It is simply a question of organized management on the basis of co-operation for seller and buyer, to arrange their business in a simpler, more suitable and convenient form, than they have hitherto conducted it.

Millers will readily convert the wheat into flour, at a fixed rate of payment, and bakers will

be found in every district, ready and willing to utilize their ovens, staffs, shops and services, for the manufacture and sale of bread upon fixed terms of remuneration.

The possible result from this system would be as follows, taking the commencing value for wheat at 35s. per quarter, with *pure bread* to sell at 5d. the 4 lb. loaf, then assuming the yield of fine flour from one quarter of wheat to average 360 lbs., which would produce 120 4 lb. loaves of best bread, and estimating the cost of labour, fuel, services in distribution, and sundries at 1d. per 4 lb. loaf. The statement is,—

	£	s.	d.
One quarter Wheat	1	15	0
Cost of baking, distributing, &c. ..	0	10	0
	<u>2</u>	<u>5</u>	<u>0</u>
Yield of flour 360 lbs.			
Produced 120 4 lb. loaves of bread ..			
Bread realized	2	10	0
Cost of Wheat and labour	2	5	0
Balance profit to be divided ..	<u>0</u>	<u>5</u>	<u>0</u>

2s. 6d. to producer, 2s. 6d. to consumer.

Making the net price of wheat £1 17s. 6d. per quarter.

And the net price of pure bread 4½d. the 4 lb. loaf.

The estimates made are for the best flour and the best bread, while the prices taken are excessively low—in but few places are a pure unadulterated bread made, and were a calcula-

tion made based upon the quality of bread the public usually are supplied with, and the prices they pay for it—the difference would be of a much more marked character.

Farmers and members of Co-operative Societies desirous to carry out a movement on this plan, are referred to the announcements of Messrs. A. M. Perkins and Sons, the steam oven builders, in the appendix, for the details by which the above arrangements can be carried into practical operation without any delay, or the provision of any capital or other liability on the part of the members other than an undertaking to take the bread and flour from the establishment at a fixed price for a given term.



CHAPTER XLIV.

FLOUR.

THE details of all trades vary, but they are readily ascertainable, and may be controlled within narrow limits. Experts can classify wheat according to its quality, and it will be easily known what a quarter will yield in fine flour, seconds, pollard, bran and offal. Millers have before been paid a fixed sum for grinding wheat, and may be so paid again. Arrangements can be made with them without difficulty.

A combination of farmers must be in a better position to profitably sell a large quantity of flour and feeding stuffs than if they were simply confined to the sale of their grain. In the latter instance they have only the small number of millers throughout the country to whom to sell their wheat, while in the former they are within the reach of all the bakers and the flour consumers of the kingdom ; and when the great advantage that this implies upon each transaction is borne in mind, the enormous beneficial

results that home farmers would derive in the aggregate, may be appreciated by those accustomed to deal with such subjects.

Foreign shippers to our markets practically exhibit and carry out two things in connection with their consignments of breadstuffs, which give them an advantage over our farmers. Firstly, if they forward flour, instead of wheat, they have a far larger number of buyers to treat with; secondly, if they send their flour in small packages, their number of buyers is still more largely increased.

In consequence of this, flour, in addition to reaching us in the 196 lb. barrels, is now largely arriving in 140 lbs., or English, half-sacks and even for retail purpose in bags of $2\frac{1}{2}$ lbs. and 5 lbs. each. These small bags are easily handled by shopkeepers, and conveniently serve domestic and family requirements, therefore they meet with a ready sale. Noting some of the present wholesale lists of the importing houses, it will be found that the quotations for this flour range from 27s. 9d. per barrel of 3 doz. 5 lb., and 29s. 3d. per barrel of 6 doz. $2\frac{1}{2}$ lb. bags.

This is equal to 55s. 5d. and 58s. 5d. respectively for the 359 lbs. of flour said by the Highland Society's Committee to be yielded by a

quarter of wheat, in addition to the pollard, bran, &c.

The result of this operation is discernible in the fact that the shippers in other countries who convert their wheat into flour, and thus enter into our market with their commodity in a form that suits the baker, or the domestic requirements of the consumer, find it much more profitable; thus the quantity of wheat imported is rapidly decreasing, while that of flour continues to increase, bringing with it the additional grievance that many of the flour-mills throughout the country are now lying still, and the labourers connected with them are unemployed.

The combination of farmers in their several districts to amalgamate their wheat, properly classify it according to quality, and convert it into flour for sale as home-grown, in suitable family packages, would in itself bring an improved demand and result in a better price for their produce.

Doubtless it is a great matter to attempt to educate a people into a change of system and new modes of procedure, but the question of food distribution is in one sense a large movement composed of a number of remarkably small transactions that in the aggregate assume enormous proportions. The indi-

vidual interests of all are so largely involved, that properly exhibited and dealt with, a great amount of support would be commanded in all directions.

By taking each stage in the operation separately, and making that clearly understood, no difficulty presents itself to the bringing of beneficial changes into active existence, and this in reality is the practical course to adopt.

For instance, it should be a remarkably simple matter for fifty or sixty farmers of Somersetshire to send their wheat to a mill in their own district to be dealt with, and receive in exchange for it a receipt or warrant, that on its face should bear such a description of its quality and character that any one could readily ascertain its current market value, to which extent it would be as convertible as a bank-note. This is done at all the elevators in America and Canada; why should it not be done here also?

For those who have the management of the matter to have the wheat converted into flour, and arrange for its despatch to a given locality in the manufacturing districts of Lancashire, there to be made into bread and sold, is a task neither unattainable nor difficult. On the contrary, it could be most readily performed, and the accomplishment of a simple work of this cha-

racter is all that is needed to enable our farmers to directly reach consumers in the most economical form, and so be in position to successfully compete, with foreign wheat-growers.

With the baker the arrangements are still easier : he has his oven, shop and staff ; a given number of sacks of flour will furnish a certain number of loaves of bread. The cost of labour and fuel is readily ascertainable, and there can be no difficulty in arriving at what is a fair remuneration to the baker for his supervision. Premises, &c., are an item that must be controlled by local circumstances.


If a body of farmers had placed themselves in a position to ensure a regular supply of flour, and then arranged with bakers to convert it into bread under their supervision, so as to be disposed of as pure bread from home-grown wheat, it may be accepted as an indisputable fact, that all things being equal, the working men of the locality where procurable, would go out of their way to purchase that bread, even if they had to pass several other shops to do so ; but if the matter were carried further, and a movement organized by which the buyers of the bread participated in the profit to some extent, and they were made alive to the national advantages, derivable from the preferential use of home-grown produce, it

may be, comparatively speaking, safely assumed that not a pound of imported wheat or flour would go into direct consumption while any home-grown was in hand, and the prices ultimately realized would afford a satisfactory return to the farmer, and furnish ample encouragement to warrant him to make an effort to increase his future supplies.

One such transaction would assuredly have no bearing on the national supply or demand, but the effect of the forcible and practical illustration that would be thus given, of what the result would be of a combination between the agricultural and industrial classes for their mutual benefit, would be rapidly spread throughout the country, and the same simple movement multiplied in many directions would rapidly take an active shape, and lead to the absorption of all the home-grown wheat our farmers possess or can produce, and at the same time inspire them with a confidence that they do not now possess, and thus lead to a much larger extension of wheat production in the future, and possibly bring under improvement and cultivation much land that cannot at present be profitably cultivated.

CHAPTER XLV.

DAIRY PRODUCE.

REAT as are the advantages derivable from Combination, Refrigeration, and Evaporation by the meat-producing agriculturists, the benefits obtainable from them by the dairying branch of agricultural industry are greater, and indeed the circumstances in connection with the trade are essentially different. The value of our annual importations of butter and butterine reaches fourteen and a half millions sterling.

We own nearly 4,000,000 milch cows ; yet there is a great difficulty to obtain a pound of home-made fresh butter of a good quality either in London or the country.

We spend nearly three million pounds sterling annually in foreign manufactured cheese, some of which is made from lard, which in its turn is made from cotton-seed oil, and we buy from continental makers twenty-five million tins of condensed milk, every year ; while we possess in England, the South of Ireland, and

also in many other parts of the kingdom, the richest milk-producing districts in the world.

We pay to the farmers' wives of France, Italy, and Eastern Europe four millions sterling, annually for poultry and eggs, while it is difficult, in London at least, to procure good home-grown poultry, or even a new-laid egg, at a reasonable price.

Inasmuch, as at a temperature of forty-five degrees, it is possible to keep butter and eggs fresh for three months, it is scarcely possible to conceive a more ridiculous position than that occupied by the members of the dairying branch of our agricultural system.

The advantages to farmers of combination may be unmistakably seen in the results that have been derived by the practice in the dairying branches of agricultural industry in all countries where its principles have been adopted and effectively carried into active operation. Danish butter and Canadian cheese owe their high position in the markets of the world to the adoption and faithful adherence of their dairy farmers to the simple system of combination amongst themselves. The pecuniary benefits they have derived from their organized operations have been remarkably great, and proved sufficient in extent to affect the national

welfare of both countries. These results have been well known to our farmers for many years; but they still remain in their unsatisfactory isolated positions and clamour for Government aid and assistance to maintain them there. It has recently been determined to devote some public money to the purpose of imparting instruction in butter and cheese making to our dairy farmers; but little good will come from the outlay unless farmers combine to prepare and realize their milk to the best advantage in the various available forms into which it can be converted.

In Canada and America the farmers of a district combine, and instead of each one buying his own small set of plant and utensils for converting his milk into butter and cheese, they club up together and buy a large set of plant for general use; and if there are fifty of them, instead of having fifty buildings occupied, and as many sets of people engaged, they fit up one building for their common purpose, and have one set of *employés*, with a small organized management to control and conduct their business; and whether it is to the creamery for butter, or to the factory for cheese, the farmer sends his milk there daily and regularly, in the first instance receiving its arranged current

value, and after the sale of the produce the balance.

The idea of making a profit from each other does not enter into the minds of any one of them. It is essentially a combined effort of the farmers of a district to make up and realize their produce jointly instead of singly.

The saving of labour and of general expenses by these means is great; and practical experience shows that, owing to the improved quality and uniform character of the product thus made, the increase in the prices is remarkable, and, as a rule, the cash receipts average more than twice the amount the same farmer had received under the old system of individual working; that is to say, the quantity of milk that, under the individual system of working, would realize, net, 20s., under the combined system, realizes, net, 40s.

According to this, the combination system organized and carried out with home dairy produce, our farmers would receive the largely increased annual amount, averaging the value of each cow's milk to realize at present 4*l.* per annum, of 8,000,000*l.*, in addition to which, producers would be stimulated to increased exertions by the improved results, and so bring about further development of an industry in

which female labour is beneficially employed, while a large sum would be expended in home produce that now goes abroad.

It is by evaporation that the large quantity of condensed milk is produced which we obtain from Switzerland, Italy, Norway, and other parts of the Continent. The same means could be more efficiently and profitably applied in connection with our home milk supply in conjunction with a combined system of working, by which the milk could be rapidly evaporated down to one-half or two-thirds of its ordinary bulk, or nearly to the consistency of cream. By this means, it would not be divested of any of its nutritive constituents, while the cost of its carriage and distribution would be materially reduced; the smaller-sized vessels required to contain it enabling it to be readily and inexpensively transmitted, at the same time it would reach consumers in a definite form, of a standard strength, and leave them the option, by the addition of water, to bring it back to its original or to any other condition; or again, the milk may be passed through a mechanical separator, and the cream only sent to the centres of consumption, leaving the skim milk to be dealt with on the farm or in the factory.

An important feature in connection with the

successful introduction of evaporated milk as an article of consumption would be the advantages derivable from the facilities afforded to the producers in remote districts to place their produce within reach of large consumers in the populous towns and elsewhere; the great decrease in bulk and weight making so material a difference in the railway charges that they would be able to profitably deliver at places from which at present they are virtually prohibited.

In the preparation of the evaporated or condensed milk, home producers would have further advantages over foreign manufacturers, inasmuch as their arrangements being for local or home consumption, the provision of tin cans and cases, which are equal to an expense of one penny per quart upon the article, would not be necessary, while the milk could be prepared with or without sugar as a preservative, according to whether it would be required to keep several days or several weeks.

The processes of milk evaporation and separation are both simple; the plant and utensils required are comparatively inexpensive; and appropriate buildings could readily be found in almost every district where preliminary arrangements might be carried on. The principal

requirements to be taken into consideration in connection with the subject are not large establishments, to embrace a wide district, but compact, small buildings, well supplied with water, fitted with cool chambers, and having ready access to railway accommodation.

By an outlet for milk and butter being established with the centres of consumption or with large consumers, a poultry and egg business would be sure to develop itself in conjunction with it, one aiding and facilitating the other.

The rearing of poultry is a natural adjunct to the dairy, and requires only the facilities for the distribution and realization to be furnished, so that reasonable remuneration may be received by those engaged in production when the supply of these valuable food products would be undertaken in all directions.

Combination, refrigeration, and evaporation are invaluable to the dairy farmers, inasmuch as by them the cost of production may be decreased, the quantity of produce largely increased, its quality greatly improved, and its value materially enlarged.

Bearing in mind the great extent and gross annual value of this branch of agriculture, the results derivable from systematically working

each department of it would form an additional amount to the aggregate profits of each party engaged in them, that would largely tend to make their business exceedingly remunerative.

Efforts have been made to show that an article of the finest character and quality may be produced upon the individual system of working, and no doubt in isolated cases, workers exist, who by the exercise of a great amount of skill and industry do produce butters and cheese of a desirable character, for which they obtain a ready sale at profitable prices, but these are exceptional instances, and go to prove that if all butter and cheese was of an equally good quality, it would meet with a ready sale.

But there is a feature in connection with our dairying industry which sooner or later will be taken into consideration, and that is the national interest in the beneficial utilization of agricultural produce. From our insular position the condition of the people in case of a war must be taken into account by statesmen of all parties ; then it would be found that the recent drifting of trade from home to foreign sources has arisen, not from our inability to supply ourselves with what we require, but from the indisposition of our farmers to adjust themselves to

the altered circumstances by which they are surrounded.

It would then be recognized that the producers owe a duty to the state to produce and realize to its fullest extent the largest possible quantity of food for the people, and that it will be incumbent upon them to fulfil that obligation in the best possible manner. The new and novel position would then present itself, that the dairyman cannot deliberately, negligently, and wantonly waste the supply of milk which nature furnishes as a food for the people, and in which they have as great an interest as he has.

In this event the farmers would be compulsorily called upon to combine and establish factories, creameries, and condenseries, so that the indirect interest of the people may be protected, and the farmers, whether they would or not, be forced to receive the utmost benefits that their dairy produce can be made to realize.



CHAPTER XLVI.

FRUIT.

FRUIT-FARMING is an altogether separate branch of agriculture, requiring special attention in its management and working, and being capable of furnishing comparatively greater proportionate benefits from a proper application of the principles of Combination, Refrigeration, and Evaporation than either the grazing or dairying branches of our great national industry.

The fruit-farmer, who possesses a peculiar and distinct agricultural interest, deals with it in an extraordinary manner.

After anxiously tending and watching his shrubs and trees through the varying climatic changes incidental to our spring and summer, when the season has advanced and the fruits ripened, he recklessly plucks and packs them into large baskets, without any regard to size, condition, or character; and sends them to a market for sale, where, if the season be a prolific one, the net amount realized will reach but

little in excess of the cost of packages, packing, and carriage, while frequently in good seasons, when crops are abundant, enormous quantities of fruits are allowed to rot on the trees, owing to the current market values being insufficient to cover the cost of collection and transit.

The losses that arise from these causes are most serious, but readily preventible. The avoidance of these self-inflicted losses would do much to benefit the agricultural interests.

Combination, Refrigeration, and Evaporation can be made to yield results to the fruit-farmer little short of marvellous. By their means the length of the fruit season may be materially extended, the entire yield of all crops utilized, their commercial value greatly increased, and an unlimited quantity of home-grown fruits made available as an addition to the food supply of the nation.

Fruit-growing in the United Kingdom may be said to be a distinctive English industry, as while the total orchard area in England is 195,071 acres, that for Wales is 3341 and for Scotland 1872 acres, or 200,284 acres in all; the total area for market-gardens being 60,850 acres, of which England possessed 35,650.

The statistics of the area in Ireland devoted to orchard and to market-garden cultivations

are not collected, an inexplicable singularity on the part of the Irish agricultural authorities.

For further particulars as to the cultivation of fruit and vegetables see chapter on the railway difficulty.

It is curious to note that two-thirds of the total orchard area of Great Britain is situated in six English counties, viz.: Hereford, 27,112 acres; Devon, 26,414; Somerset, 23,640; Worcester, 18,527; Kent, 18,296; and Gloucester, 15,500; being 129,489 acres in all. This concentration of fruit cultivation should lend itself favourably towards the introduction of new means of collection, preparation, distribution, and realization.

The value of the importations of fruits that entered into competition with our own crops in 1888 were: Raw apples, 1,037,084*l.*; unenumerated, 1,387,271*l.*; oranges and lemons, 1,464,640*l.*; dried and preserved raw vegetables, 621,771*l.*; total, 4,580,766*l.*

These figures are sufficient to bring one prominent fact into notice, viz., that we have become large buyers of fruits and vegetables from foreign producers, while our own growers have bitterly complained of their inability to reach our markets owing to the excessive rates exacted for the carriage of their fruits by rail,

which left them little or no surplus after paying the costs and expenses incidental to preparing for market and realization.

In looking into the operations of fruit-growers abroad in order to discover how far they can be made applicable to the interests of home growers, two circumstances of an entirely opposite character arrest attention, as it is found that, in addition to the ordinary sun-dried fruits, such as raisins, figs, dates, &c., that we receive from tropical countries, Australia and New Zealand, notwithstanding their great distance, can, by means of cold air or refrigeration, supply us with their surplus crops of green fruit in good order and condition, while Canada and America, by means of hot air, can send evaporated or mechanically dried fruit in any quantity that can be used.

Some of the green fruits from Australia and New Zealand shown at the recent Indian and Colonial Exhibition, and considerable portions of the large shipments that have arrived since, were of the finest character, and in remarkably good condition, while the evaporated fruits from Canada, upon being cooked, were found to possess all the aroma and freshness of well-grown and recently-gathered fruits.

The successful solving of these two scientific

problems, however, lead to a commercial consideration of the subject, and, as a natural consequence, the question arises, If fruit-growers abroad can supply our requirements with advantage to themselves, why cannot our own fruit-growers do so? and what other advantages are derivable from the system?

We know that the circumstances attending fruit-culture differ greatly in character, from those of the grazing and dairying interest in agriculture, inasmuch as the two latter are carried on successfully all the year round, while the fruit-grower has but a short season in which to handle his crop.

In this circumstance the home fruit-grower has nothing to fear from his Australasian competitors, as the seasons of the two hemispheres being at different times, the Southern yield reaches us when there is no English fruit available, and therefore has nothing to compete with; but the problem for solution that arises is, If Australians can send us fruit when we have none, why should we not do the same, and send them some of our crops, which would reach them when they have no fruit in season?

For character and quality the English fruit cannot be excelled, and it would readily enter into consumption and prove acceptable in every

direction to which it would be shipped. The cool chambers that come home from the colonies full of meat, fruit and other produce, return empty, and the same operations that lend themselves to bring consignments home in good order and condition will answer to take fruit back to the colonies, and Australian consumers will as eagerly purchase our fruit, if we can supply them, as we theirs.

The complete system of railways that have been constructed in each of the Australasian Colonies, which extend from the sea-ports and communicate with the principal townships of the interior, may be made to bring their large and rapidly-growing populations within easy reach of British fruit-growers, whenever it is deemed advisable to carry out a through rate traffic by a systematic organization.

CHAPTER XLVII.

FRUIT EXPORTATION.

BUT the successful establishment of the Australian trade opens up the prospect of a still larger market for English fruits if the opportunity is judiciously embraced. India and many other tropical countries will become willing and valuable purchasers of the produce of our orchards, if it is placed in their markets in good order and condition, which there is no difficulty in doing.

But a still more striking advantage presents itself as obtainable from the successful results derivable from cold storage, if fruits can be kept in good order and condition for the two months that is occupied in the transit from the Australian orchard to the English consumer.

Why should not home produce be maintained in that condition for a similar period at the home orchards, and the means thus utilized to lengthen the comparatively short seasons during which fresh, ripe fruit is obtainable, which hitherto has necessitated its all being sent into the market at

about the same time, when the dealers obtain it at prices that bear no relation to what consumers have to pay, while a large quantity, damaged and perished, becomes a total loss?

If by the employment of cool storage, fruit can be kept in a fresh, ripe condition for two or three months, supplies may be sent to market gradually, and gluts thereby prevented. Better rates will be obtainable, as consumers, being able to procure fruits for a much longer period of the year than they can at present, will be quite prepared to pay more money for them.

The cool chambers of the vessels that brought the green Australian fruit to the Exhibition were kept at an average of forty degrees Fahrenheit, a temperature that could be readily procurable in our moderate climate, and maintained in a well insulated chamber at a moderate cost.

In addition to cool storage, the manner in which fruits are sent to market is a subject that deserves serious consideration, most important results depending upon it.

The difference between the home and Continental styles are most marked in character, and the latter convey a lesson; the details of which should be fully impressed on all our home-growers, whose custom it is to pack the fruit loose in half-bushel or bushel sieves or baskets,

that can only be dealt with by the trade and dealers ; on the Continent everything is packed into small boxes or baskets that meet the requirements of the ordinary customer.

By the home system the fruit is all thrown into the baskets, and varies in size and condition, and if at all ripe, or any of the berries bruised or damaged, the weight of those on top will largely affect those at the bottom, resulting in much of the fruit being spoiled and wasted, a loss that forms an element of consideration with the dealer when buying, which eventually falls on the producer.

The Continental packages are neatly packed, the fruit being selected and made to have a presentable appearance ; the comparatively small quantity not only preventing the loss from bruising, but the fruit will keep good several days longer, owing to the package relieving it from undue pressure and allowing the air to get to it.

The packages in which home-grown fruits are sent to market being of a size that places them beyond the reach of ordinary consumers, results in a direct loss to growers. It cannot be too readily understood and widely known to all producers of perishable foods, that the nearer the package is to the wants of ordinary con-

sumers the more readily will it sell, and the larger proportionate price will it realize.

In addition to dealing with ripe fruit in its fresh state, large profits may be made by preserving it. Irrespective of making it into jams, which requires a large expenditure for sugar.

Fruit may be preserved in two ways—by canning and by evaporating. The canning of fruit has been largely carried on in America, Portugal, and the Straits Settlements, &c., &c. It yields a good result, but this also necessitates a large expenditure of capital for labour, plant, tin, labels, &c.

The making of jams and the preservation of fruits by canning cannot, however, be profitably carried on in a small way or by small holders, owing to the expenditure necessary to make the goods known to the public, without which the trade will not purchase them, or make any effort to promote their sale.

The evaporation of fruits is a simple and easy process, attended with but little expense, and invariably yielding good results. The fruits are non-perishable, easy to transmit at little cost, and can be readily sold by grocers in the ordinary course of their trade.

In Canada and America the evaporating process is working a revolution in the industry of

fruit-farming, the fruits becoming a staple commodity wherever they are known, and the scope of the markets constantly growing wider. The Fruit Growers' Association of Nova Scotia, in their Annual Report for 1884, state :—

“Large evaporators, located in extensive apple-producing regions, by appropriating a vast amount of fruit that would otherwise be forced upon the market, make room for the product of thousands of orchards. The tendency of this revolution in apple-drying is to make the production of this fruit a reliable business. We think that farmers who have come to the conclusion that apple-growing is unprofitable need no longer fear to set out apple-trees. In average seasons the fruit will always be in demand, and in years of over-production, which have heretofore been a dread, it will command a price that will repay harvesting.”

Evaporation may also be largely employed in drying vegetables for home consumption and export. Potatoes have been so dealt with by us for many years past ; but the quantity of dried vegetables now imported for the use of the army, navy, and mercantile marine is very large, their preparation could be profitably carried on in our remote agricultural districts,

from whence the cost of transit of very bulky vegetables is a bar to their being sent into towns for consumption. This course would result in employment being found for a large number of persons.

The preparation of the fruit crops for market on the lines indicated—viz. by packing in small cases, evaporating, &c., would necessitate the employment in the country districts of a large quantity of extra labour for a short time during the season. This, with a small amount of organization, might readily be provided from the female employés in the industrial establishments of the metropolis and manufacturing districts, when, exclusive of the benefits referred to, that fruit-growers would derive, a social advantage of the most humanitarian character would spring out of the movement for thus meeting the requirements of the markets, this would be found in the profitable and beneficial employment that would be provided in the country at the best season of the year to a large body of young women and girls who are now engaged in sedentary and unhealthy employment in town factories. The change of scene and occupation thus furnished could not fail to promote their health, prove enjoyable, and be largely appreciated by those so employed.

The utilization of town or special labour for agricultural purposes is by no means a new feature in our social system, as from time immemorial it has been the custom of a certain section of the community to proceed to hop districts during the short season, and be engaged in profitable employment. Irish labourers, in large numbers, visit us during the harvest season; and in Scotland the bulk of the residents in the Highlands regularly visit the coast during the herring season, the receipts from which source form a considerable portion of their income for the year.

The introduction of a system of selecting and packing fruits would give employment to a large body of females at present engaged in a similar occupation of packing in wholesale confectioners, chocolate and biscuit factories, artificial flower making, wholesale stationers, bookbinders, match-makers, cigar-making, and numerous other trades, that have brought into unison a quick eye and nimble fingers in handling and packing with precision commodities of all kinds. The numerous organizations in the metropolis, engaged in the promotion of female industries, might well devote some attention to this subject, in which they would be ably supported by the clergy of the country.

CHAPTER XLVIII.

COMBINATION IN AGRICULTURAL PRODUCTION.

NUMEROUS attempts have been made to bring food-producers and consumers into direct communication, with the view of doing away with the middleman, but the efforts to effect this desirable object have been sought to be attained by the formation of co-operative associations and companies. The results so far have not been satisfactory, inasmuch as, from the want of knowledge, the true commercial lines upon which their operations should be conducted have not been recognized and acted upon by the former, while the latter have simply proved to be the middlemen in another but much worse form.

Co-operation in connection with perishable foods so as to simplify their distribution must be of a dual character, viz. :—

1st. That of producers, on the one hand, to unite in the provision and preparation for distribution of a regular supply of their particular commodities of a defined and uniform quality,

if possible, at a fixed price, and in a form as near to the requirements of consumers as they can be packed.

2nd. That of consumers, on the other hand, who would arrange for the reception and distribution of those supplies amongst themselves; with our working classes, co-operation to buy is well understood, and from the small beginnings of thirty years since, their societies are to be found in almost every district, many with several thousand members. The total number of societies now numbering 1432, with nearly one million members, whose aggregate purchases annually extend beyond thirty-four million pounds. These organizations would be quite ready to buy from home farmers if they could be regularly supplied—more especially with meat, as they have tried to deal in that article but without success, as they have been unable to carry out the necessary arrangements for the purpose which farmers could easily do.

The principle of co-operation amongst producers is being recognized by dairy farmers in Canada, New Zealand, Ireland, and in England by the establishment of creameries for making butter and factories for making cheese. The successful results these establishments have attained by their combination is owing to the

production of an article of a more uniform character and improved quality, which invariably commands better prices than the parties would have received had they each continued to make and sell their produce on their own account while the increased scale of production enables the work to be carried out at a large average reduced cost. It is therefore to be hoped that the good results obtainable from this system which are applicable in every district, will lead to its extension in all directions.

Similar systems of co-operation could be readily carried out here with equal advantageous results by producers of live stock, milk, butter, cheese, poultry, fruit, &c., the only difference being slight alterations in details of management according to the different articles.

With the organization of producers in counties and smaller local areas from whom reliable supplies of meat and other articles of produce could be obtained at fixed prices, by consumers in towns and districts, facilities would be afforded for the formation of a central agency, which for a nominal commission could undertake to carry through the clerical and financial details of the transactions of both parties, and be the means of direct communication between them.

Such an agency could make itself acquainted

with the stocks or crops that farmers in a particular district may have for disposal, and receive the orders of those who may require the supplies. It could organize and supervise the slaughtering staff for live stock, keep itself informed of the stocks on hand, and arrange for the direct transmission of the meat, &c., from the slaughterhouse to butchers, co-operative stores, or other customers, whether wholesale or retail.

It could superintend the manufacture of the edible offal and the sale of the products.

The details incidental to its arrangements may to the uninitiated appear complex ; but the whole system is simply one of organization and book-keeping, and when once in operation would be capable of indefinite extension.

The position of such an agency would be of a purely mechanical and official character.

It would not be interested in buying as cheap as possible and selling at the highest price obtainable, but would be called upon to provide for a fixed given remuneration, a definite service of a practical character in a commercial form, that both producer and consumer required, but neither could properly and economically furnish. This it would be enabled to do with advantage to both at a most economical rate.

The principle of the formation of establish-

ments on a large scale, fitted with all the plant, machinery, and appliances for the conduct of operations on behalf of producers upon fixed terms of remuneration, is by no means new abroad. In Australia and New Zealand establishments are at work where live stock are received, slaughtered, and dressed, the products prepared for shipment, and carcasses refrigerated and shipped at a fixed sum per head. There a settler in the bush may send down to the shipping port 50 or 5000 sheep, where they are all dealt with as he directs; and the results have proved the soundness of a system that furnishes producers with the maximum amount of aid and experience at a minimum cost, at the same time superseding the large number of superfluous middlemen that at present encumber all transactions, in perishable food and avoiding the numerous heavy charges inseparable from indirect distribution.

The combination of practical commercial, and agricultural experience, thus set out if brought into working operation, would result in placing the producers of perishable foods in the United Kingdom on an equal footing in our own markets with those abroad, when it would be found by our farmers that the advantages arising from their proximity to the centres of consump-

tion would more than cover the slight reduction in the costs of production in America and on the Continent, and allow home-producers to enter their own markets upon equal terms with their foreign competitors, when they will occupy a position in which no producers outside the country could successfully compete with them, as they would by increased supplies gradually reduce prices to a point that would render it unprofitable for foreign producers to supply us.

The definite situation that this course of procedure would create resulting in an increased supply of home-grown foods with a specific outlet, would place us in the position of independent buyers, with anxious sellers from all parts of the world to whom we could dictate the terms and conditions upon which we would deal with them—then we could, if desired, confine our trade to our own colonies, and thus pave the way in a practical manner for bringing about the Federalization of the Empire upon a sound commercial basis, which is the only foundation upon which it can permanently rest.

In this way Canada, while its cattle remained free from disease, could supply Ireland and Scotland with Store Stock for conversion by our own farmers into prime beef, while our colonies of Australia and New Zealand, instead of foreign countries, would take their place if

needed with their supplies of mutton and beef for the second-class branch of our trade, thus allowing the larger portion of the forty million pounds sterling now annually paid for perishable foods to foreign countries, to remain with us or our Colonies.

Our Colonies should, in their own interest, study this position ; they are desirous of bringing their vast extent of lands under cultivation, and must thus regularly acquire large crops of produce, for which a remunerative outlet is an essential necessity. In no place in the world can they secure this other than in the Mother-country, and they should unite in a concerted movement to offer every possible inducement to obtain the advantages that the exclusive right to freely supply the compact millions of home consumers would yield. The first step in this direction should be the establishment of a perfectly free trade between themselves, and then approach to the Imperial Government as a whole, with the view of the creation of a general free trade between themselves, the Mother-country, and such nations of the world as were willing to concede similar privileges. In this way the Mother-country, her colonies, and such nations of the world that held and practised enlightened views, would form a grand organization for each others' aid and advancement upon a sound and natural basis.

CHAPTER XLIX.

THE RAILWAY DIFFICULTY, AND HOW TO DEAL WITH IT.

THE railway difficulty and how to deal with it presents a social problem for solution of such immense magnitude, involving interests of so vast a character, that to justly determine it with due regard to the rights of all parties demands the most serious and earnest attention. On the one hand we have the enormous sum of 845,972,000*l.* sterling invested as a paid-up railway capital in a movement ostensibly for the benefit of the public, which sum is entitled to a reasonably fair interest, while on the other hand the natural development of the resources of the nation are largely interfered with by the courses that have been followed by those having the control of the internal traffic incidental to the distribution of home-grown produce.

The full extent to which the Agricultural and Industrial classes suffer by this course of procedure, may be clearly understood from an

inspection of the accompanying map of England and Wales, which exhibits each county with its population, its total area, and the extent of that area devoted to fruit-growing and its allied industry, market-gardening. The facts thus disclosed are of a most startling character, as they show that in the major portion of the country there is little or no fruit or green foods locally produced to supply the requirements of the people and that a large proportion of the population of the kingdom are absolutely deprived of so healthy a food product as vegetables are known to be, which might be readily provided in abundance.

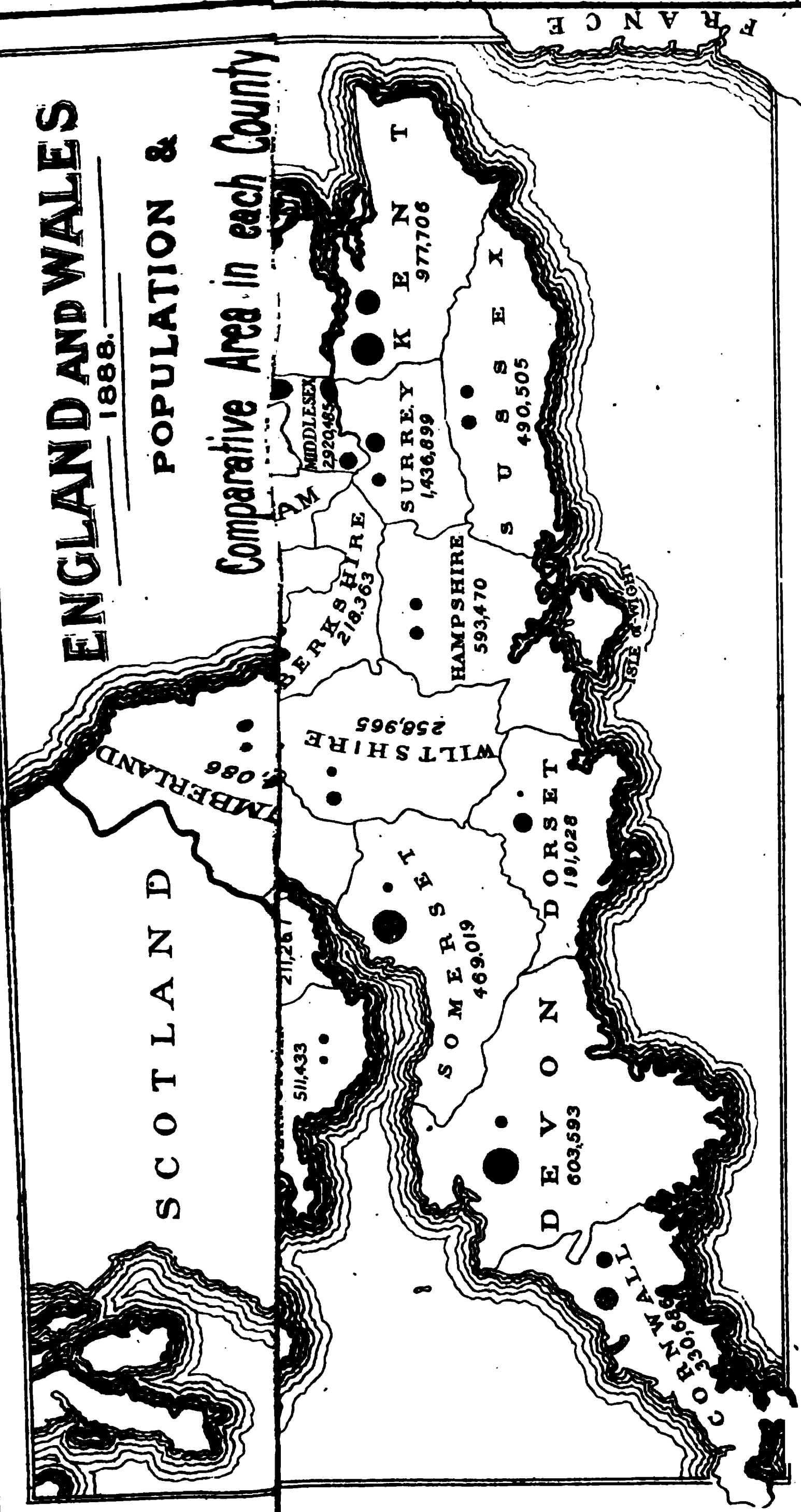
There may be different opinions as to the cause or causes of this alarming condition of things, but there will be a consensus of opinion upon one point, which is that the charges of our railways for the carriage of home-grown produce and the general arrangements for its transmission have been of such a nature and extent as to render the cultivation of these commodities unprofitable where it has been carried on, and deterred the extension of cultivation in other districts by reason of the want of facilities to despatch the produce when grown to the centres of consumption in the manufacturing and mining districts for profitable sale, thereby failing to encourage

ENGLAND AND WALES

1888.

POPULATION &

Comparative Area in each County



the production of a supply of home-grown food for the people.

It is but common fairness to admit that the investors in railways are entitled to a legitimate interest on their capital, equally with those who employ their means in any other direction ; but, at the same time, the investors in railways having had privileges publicly conceded to them, upon the strength of representations they made that they intended to act for the benefit of the community, they are in duty bound to see that those engagements are properly discharged, and that these undertakings are judiciously, effectively, and economically conducted ; and if, from any cause, waste or mismanagement occurs, which they should, but do not control, they forfeit their claim to reasonable interest, which the public should not be called upon to make good by the payment of excessive charges, inasmuch as only they can interfere with the management of their respective undertakings.

Improvements in the details of working their traffic are continually being made by railway authorities in all parts of the Continent, in America, and in our Colonies ; these are not within the province or duty of the subordinate officials of the different home companies to

ascertain and test, with the view of their being brought into operation.

Neither should their permanent officials be saddled with the responsibility of making experiments, however advantageous they may appear, the heavy expenses attending any new introduction being such that from fear of failure, but few will be inclined to move in that direction; for the working of our home railway system has grown into an enormous series of organizations, each of which employs a staff equalling an army corps in numbers, and similarly officered.

It is a matter of serious consideration for railway investors, whether in view of their immense aggregate interests, they should not possess an independent organization of a scientific and commercial character, to at all times watch the practice and improvements of various characters that are being continuously brought into operation in foreign countries and the colonies, and, by impartial examination, determine their value, and to what extent, if any, they may be beneficially utilized in the United Kingdom. This is purely a matter for the voluntary consideration of those interested in railways, and relying upon their profitable management; but railway authorities, in this

age of progress, certainly have not the right to rely upon all the old expensive, wasteful, and obsolete courses of working and procedure in the conduct of their traffic arrangements, and then require the public, by the payment of heavy charges, to make good the deficiencies that they unnecessarily inflict on themselves.

It is well known that railways on the Continent and in America carry traffic at lower rates, and are worked at less cost and expense than our own lines ; it must therefore be advantageous to those interested in home railways to ascertain the exact cause of this condition of things, and the means by which they may be, if possible, taken advantage of ; and, at the same time, for their occupying a definite position, in order that they may formally submit any matter to the directors of the different companies they are connected with in such a form as will entitle it to the practical consideration that subjects at present dealt with by the existing scientific and learned societies do not generally receive, however valuable they may be.



CHAPTER L.

RAILWAY OBLIGATIONS.

WITH every regard for the rights of investors to a legitimate interest upon their capital, the question must be removed from that comparatively narrow sphere of consideration to the far wider one as to the duties that were imposed on the railways when the rights to construct their undertakings were conferred upon them.

There can be no misunderstanding on this point, for leaving the general subject and dealing with it in its particular character, it will be found that every application to Parliament for a Bill to acquire the land and construct a railway has been based upon the ground that it was for the public benefit that the privileges asked should be granted.

Sight must not be lost of the fact that every railway Act contains a schedule of the maximum tolls and rates that it is allowed to make for its services. But at the same time it should be borne in mind that a large number of the

subsequent railway privileges were granted upon the assumption that there would be a legitimate competition for traffic within reasonable limits.

With us home-grown produce is, beyond all question, the food of the people, for the people, and its economical and ready transmission from the fields of production to the centres of consumption is a matter that directly affects, for good or ill, producers and consumers. The excessive charges now made are found to so largely influence the welfare of the nation, that the question of railway rates has forced itself forward as a subject of general consideration.

Not only does a grievance exist in the fact that the charges for conveyance of foods are excessive, but the difficulty is increased, owing to those on imported foods being made upon a much lower scale than that of home-grown produce.

The railway authorities, with much plausibility say, we have invested 850 millions sterling in building the railways, and receive but a reasonable return for the capital expended, and that lower rates would interfere with their small profits ; they also maintain that foreign produce comes to them in bulky quantities, and if they did not carry it at low rates the public would be

deprived of a large amount of food that is now provided for them cheaply. This may or may not be.

But it must be borne in mind that the bulk of the traffic from abroad is collected by carriers or agents in small quantities, and delivered by them to the railway in bulk; and it is by this means that the foreign farmer has the facility for entering our markets, that the English farmer is deprived of. Once let there be a through truck-rate, and then the old system of carriers and agents—that the new railways suppressed—will reappear, and we may trust to ordinary trade competition to bring an equitable rate for small packages into existence

On the other hand, it is contended that railways are not justified in carrying foreign produce at cost, and making their profits entirely from home produce; further that the extravagant and unnecessary competition for traffic and great stations unnecessarily create a great increase in their working expenses, which should not be charged to home producers or consignees.

The railway system throughout the country is, however, conducted upon a peculiar principle that is not generally known, which operates most disadvantageously to the public interest.

In the first place, there is a stringent combination amongst themselves, by which the rates to be charged, and all facilities to be given the public, with other matters in connection with the traffic in which the public are concerned, are arranged ; these are governed by different working committees, composed of representatives of all the railways interested in the particular questions, and no railway company dare deal with any question, even on its own line, without referring to the traffic committee, nor can it in any way act contrary to the determination that the committee have arrived at, thus forming the most powerful trades union this, or any other country has ever seen or suffered by.

Outside this combination there is a wide, expensive and most unnecessary competition for traffic, the cost of which must largely affect the aggregate working charges, and necessitate the imposition of higher rates to cover them.

These proceedings are not the legitimate outcome of ordinary business arrangements, and they formed no part of the understanding upon the basis of which the privileges and monopolies were granted to the railway companies, in order that they might establish themselves.

CHAPTER LI.

UNDERSTANDINGS AND CONDITIONS.

NO one will desire in any way to interfere with the rights acquired by the railway, upon the faith of which they have invested their capital, but the people will not be content, after having granted privileges to several railway companies upon certain implied understandings and conditions, that after they had completed their undertaking and obtained the control of the transmission of traffic, they should combine together to extort different conditions to those they were entitled to.

It must be borne in mind that upon the formation of railways, it was understood that they would construct their lines, and that the public would provide the trucks and traffic, and pay a toll for the use of the engines and rails. This would have tended to a healthy competition, and led to the adoption of a reasonable tariff of rates by those engaged in the trade. As a matter of fact, it did bring into existence a number of carriers, the same as exist on the

Continent, who collected and delivered the traffic, paying station-to-station rates.

But in the course of time the railway authorities, to secure the monopoly, bought out the carriers, and also acquired the lands for goods stations; and having thus secured the control of the traffic, claim the right to charge not only the maximum rates allowed them by their various Acts, but also for every service incidental to the collection, proper retention, weighing and delivery of goods, in addition to a terminal charge for the use of their stations where the goods arrive at.

These various charges, virtually enable the companies to levy whatever they please upon the goods placed in their hands, which they invariably do, basing their rates not upon the services rendered, the amount of the traffic carried, and the distance travelled, but on the class of goods, and what, in their opinion, the articles are able to bear.

In their classification, food products are invariably in the fifth or one of the highest classes, but exceptions are made to the rule. These are in the case where the railway has to enter into competition with water-carriage, and also in connection with goods from abroad, which are principally collected by carrying agents who

collect and deliver their own goods, paying a through or truck-rate on the Continent, and are free to use whatever line they please on this side: in these cases competition settles the rates, and no consideration is given as to whether the traffic pays or not.

It will thus be seen that the railway companies have virtually assumed a position which gives them the right, at their will and pleasure, to tax the foods of the people to any extent they feel disposed; a right they have undoubtedly exercised to the detriment of the public and their own interests.

One of the principal measures that is necessary to facilitate the organization of producers and consumers, each in their own districts, is an economical system of carriage and parcel delivery by railway. This all parties should unite in seeing embodied in the schedules of maximum rates and charges that have been submitted to the Board of Trade by the various railway companies in accordance with clause 24 of the Railway Bill that has recently been passed. A through truck-rate from station to station on railways having direct connection with each other, would do much towards bringing agricultural districts into communication with centres of consumption.

Such a station to station truck-rate on railways, coupled with a small delivery-rate by the existing parcel post, or other means of delivery, would do very much to facilitate the direct communication between buyers and sellers and the suppression of middlemen, as it would lay the foundation for the better realization of home-grown produce, from which great advantages must accrue. By its means farmers could combine and send their produce made up in small packages or baskets, which would be under the through-rate system on the railway, but addressed for delivery on arrival at terminal station.

The position of the metropolis in this matter is the most anomalous one conceivable, and will be discovered in the fact that it has been left to the eight railway companies that convey the daily food of its four million inhabitants, together with the Corporation, who conduct the markets so as to render them monopolies in the hands of a few favoured traders, to continue levying charges in the form of excessive rates, commissions, and middlemen's profits, that are gigantic in proportion to the "octroi" collected on the boundaries of most continental cities, which we look upon as excessive, but which, in any event, is legitimately collected and

expended as public money in the public service.

Irrespective of the requirements of the nation, the metropolis for itself is entitled to a Free Trade, Fair-Trade, and a Fiscal Reform for its supplies of food, so far as its markets and railways are concerned, and its people should insist upon, and not rest satisfied until they had acquired the right to free and open access to the stations where the trucks arrive, and to which farmers, if they wished, could legitimately enter and be able to sell and deliver their produce from the trucks, and not be charged a higher rate of carriage than would leave a fairly remunerative rate on the cost of its conveyance.

Bearing in mind the very large proportion that home-grown foods bear to those imported, together with the relative amount of their wages expended by the working classes for the foods of themselves and their families, these proceedings are nothing but an indirect tax imposed upon the food of the people, which reaches a sum very much larger in extent than what the working classes are required legitimately to contribute to the national and local rates and taxes necessary for the maintenance of the various departments of the realm.

CHAPTER LII.

AGRICULTURAL DISCLOSURES.

BUT the injury is not confined to this point alone, for the heavy burdens thus placed upon the transit of produce has rendered it unproductive to raise many articles in those portions of the country that are any distance from the centres of population, and virtually prevents a large extent of land from being brought under cultivation.

An examination of the agricultural returns disclose many facts that are painful to contemplate, for market-gardens and orchards, the yields from which are beneficial to the people and should be profitable to the farmer. can only be found to any extent in the counties immediately adjacent to the metropolis; and even the fruit-growers of Kent find that the railway charges for bringing their produce to London frequently absorb the bulk of what is received for it, and vegetables are only grown close to London.

It will be seen from the accompanying statistics of land cultivation issued by the

Agricultural Department for 1888, and the map prepared from the data thus furnished (*page 374*), that it is only in those counties in the immediate vicinity of large centres of people, and then only within cartage distance, that the cultivation of fruit and vegetables is pursued to any extent, while the remote counties grow little or nothing.

ENGLISH, WELSH, AND SCOTCH COUNTIES, SHOWING THEIR POPULATION AND AREA, WITH THE NUMBER OF ACRES OF ORCHARDS, SMALL FRUIT, AND MARKET GARDENS IN EACH, FOR THE YEAR 1888.

Compiled from the returns of the Agricultural Department of the Privy Council.

NOTE.—The Acres of Small Fruit are mostly included in the Orchard Areas.

ENGLAND.

Name.	Population.	Total Area Acres.	Acres Orchards.	Acres Small Fruit.	Acres Market Gardens.
Bedford	149,473	295,509	681	89	5,953
Berkshire	218,363	450,132	2,270	126	435
Buckingham	176,323	467,009	2,373	206	496
Cambridge... ..	185,594	524,926	2,315	1,441	1,489
Cheshire	644,037	705,493	1,941	1,008	1,225
Cornwall	330,686	869,878	5,100	716	1,265
Cumberland	250,647	970,161	319	97	289
Derby... ..	461,914	656,243	1,005	223	692
Devon	603,595	1,655,161	26,485	803	1,112
Dorset	191,028	627,265	4,265	63	138
Durham	867,258	647,592	283	199	762
Essex	576,434	1,055,133	1,545	519	3,357
Gloucester	572,433	804,977	16,169	1,042	1,627
Hampshire... ..	593,470	1,032,105	1,750	746	1,585
Hereford	121,662	532,898	26,269	175	75
Hertford	203,069	391,141	1,298	245	396
Huntingdon	59,491	259,515	532	185	394
Kent	977,706	1,004,984	17,114	12,344	10,039
Lancashire	3,454,441	1,207,926	2,451	1,360	1,408
Leicester	321,258	511,719	972	300	492

ENGLAND—continued.

Name.	Population.	Total Area Acres.	Acres Orchards.	Acres Small Fruit.	Acres Market Gardens.
Lincoln	469,919	1,767,962	1,872	750	1,023
Middlesex	2,920,485	181,317	3,750	2,649	7,840
Monmouth... ..	211,267	368,399	3,888	54	393
Norfolk	444,749	1,356,173	2,158	883	1,207
Northampton ...	272,555	629,912	772	167	412
Northumberland	434,086	1,290,312	122	326	768
Nottingham ...	391,815	526,176	1,916	480	961
Oxford	179,599	470,095	1,692	49	275
Rutland	21,434	94,889	76	35	28
Shropshire... ..	248,014	841,167	3,900	131	91
Somerset	469,109	1,049,815	23,787	288	812
Stafford	981,013	732,434	1,251	113	837
Suffolk	356,893	949,825	1,620	333	604
Surrey	1,436,899	483,178	2,293	674	3,218
Sussex	490,505	934,006	2,482	483	1,626
Warwick	737,339	566,458	1,736	253	933
Westmoreland ...	64,191	500,916	336	30	19
Wilts	258,965	859,303	3,271	102	302
Worcester	380,283	472,453	18,658	1,360	3,756
York (East Riding)	364,990	804,798	743	486	491
„ (North Riding)	346,260	1,361,664	974	295	293
„ (West Riding)	2,175,314	1,716,389	1,606	948	2,659
Total for England	24,613,926	32,597,398	194,040	32,776	61,777

WALES.

Name.	Population.	Total Area Acres.	Acres Orchards.	Acres Small Fruit.	Acres Market Gardens.
Anglesey	51,416	193,511	9	8	6
Brecon	57,746	460,158	1,119	9	5
Cardigan	70,270	443,387	46	11	11
Carmarthen ...	124,864	606,172	141	17	14
Carnarvon	119,349	369,482	66	27	45
Denbigh	111,740	392,005	271	263	318
Flint	80,587	169,162	164	42	40
Glamorgan	511,433	547,070	305	55	520
Merioneth	52,038	385,291	22	16	13
Montgomery ...	65,718	485,351	534	67	3
Pembroke	91,824	393,682	49	11	17
Radnor	23,528	276,552	631	6	1
Total for Wa'es .	1,360,513	4,721,823	3,357	532	993

SCOTLAND.

Name.	Population.	Total Area Acres.	Acres Orchards.	Acres Small Fruit.	Acres Market Gardens.
Aberdeen	267,990	1,258,510	19	283	432
Argyll	76,468	2,092,458	11	10	21
Ayr	217,519	729,186	95	85	101
Banff	62,736	412,258	7	24	3
Berwick	35,392	296,362	21	11	26
Bute	17,657	140,327	1	17	93
Caithness	38,865	446,149	—	—	1
Clackmannan	25,680	31,422	14	13	14
Dumbarton	75,333	168,863	3	50	73
Dumfries	76,140	685,519	43	58	51
Edinburgh... ..	389,164	232,603	109	178	841
Elgin or Moray... ..	43,788	308,368	9	7	6
Fife	171,931	316,089	55	70	113
Forfar... ..	266,360	563,266	13	98	301
Haddington	38,502	173,637	100	357	638
Inverness	90,454	2,708,237	38	20	7
Kincardine	34,464	246,810	3	80	65
Kinross	6,697	49,812	2	2	—
Kirkcudbright	42,127	582,982	49	23	13
Lanark	904,412	568,840	571	1,343	1,122
Linlithgow	43,510	77,256	6	15	22
Nairn... ..	10,455	125,918	5	2	3
Orkney & Shetland	61,749	—	—	—	—
Peebles	13,822	227,869	—	2	3
Perth	129,007	1,656,082	449	542	425
Renfrew	263,374	160,407	42	56	127
Ross & Cromarty	78,547	2,044,217	20	5	14
Roxburgh	53,442	428,464	55	33	59
Selkirk	25,564	166,524	1	5	9
Stirling	112,443	295,285	32	19	26
Sutherland... ..	23,370	1,347,033	2	2	—
Wigtown	38,611	303,576	6	6	4
Total for Scotland	3,735,573	19,466,978	1,781	3,416	4,613

Thus it will be found that in the whole of England, with its 24,613,926 inhabitants requiring to be fed, and its 32,597,398 acres, from which food products may be drawn, there is but 61,777 acres devoted to the production of

market-garden produce, out of which the five counties of Kent, Middlesex, Bedford, Worcester, and Essex have a total area of 30,945 acres, being 113 acres more than one-half of the whole quantity. The figures for the different counties in the order of their extent are—

Kent	10,039 acres
Middlesex	7,840 „
Bedford	5,953 „
Worcester	3,756 „
Essex	3,357 „
<hr/>	
Total	30,945 acres

Lancashire, with a population of 3,454,441 souls, and an area of 1,207,926 acres, has but 1408 acres under cultivation as market-gardens ; while the five counties that have the smallest areas are—

	Area.	Market Gardens.
Westmoreland...	500,916 19 acres
Rutland	94,889 28 „
Salop	841,167 91 „
Hereford	532,898 75 „
Dorset	627,265 138 „
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Total	2,597,135 acres	351 acres

Being a total of but 351 acres in the whole of the five counties named devoted to the production of vegetable food, although they possess a total area of 2,597,135 acres and a population of 645,729 in themselves, while they are in the immediate vicinity of large centres of people.

CHAPTER LIII.

A NATIONAL CALAMITY.

IT has often been stated, with much wonderment, especially by foreigners, that we are not a salad-eating people: evidently from whatever cause this condition of things has arisen, it cannot be looked upon in any other light than as a national calamity, which has operated to deprive the people of a large amount of healthy vegetable food, and at the same time prevented the utilization of much larger areas of land for their production than at present cultivated.

An exhaustive examination of the figures from different points shows that this extraordinary and much-to-be-regretted condition of things is the evident outcome of the railway system of rates, which by prohibiting the economical transport of vegetable produce, has discouraged farmers from engaging in its production.

There is every reason to believe that the unprofitable results that have attended the culti-

vation of fruit and vegetables in the districts in proximity to large populations, have been the means of deterring farmers in remote districts from engaging in the cultivation, owing to inability to transmit the produce to market at a reasonable rate after the costs of its production had been incurred ; the complaints on this subject have been most general for many years past.

Strange as it may appear, these complaints have been most bitter from the county of Kent, which adjoins the Metropolis, and indeed furnishes part of the area of London. Some of the growers whose grounds were situated on the Medway obtained relief by sending their fruits up by sailing-vessels. Whether the growers of Hereford and Devon have ever thought of supplying the metropolis with their fruit, or have become so inured to their position as to have lost all heart in the matter, it is not possible to say, but the time cannot be far distant when it will be felt that the public have some interest in the natural produce the land is capable of yielding, and may not only consider that a duty rests on the occupier, whether tenant or landlord, to legitimately till the soil and bring out its capabilities to the utmost extent, but will also provide against un-

reasonable difficulties being placed between the producers and consumers, by insisting on the transmission of food products upon a scale of rates that while furnishing the railway companies with a fair profit on their working expenses, will deprive them of the right which they have thus far exercised of placing a tax on the foods of the people, or of so conducting their operations as to prevent the legitimate development of our national agricultural industry.

The suicidal course thus pursued by railway authorities must injure them as much as any one, for they might rest satisfied that if inducements in the shape of reasonable carriage-rates were held out to the farmers, they would direct attention to the profitable business of fruit and vegetable growing, the raising of poultry, production of milk, &c. ; and thus the railways would receive many thousands of tons of extra traffic that they do not now carry, for the simple reason that it is not produced.

With freer facilities for intercourse there would be a larger exchange of commodities, and the railways themselves would benefit from the reasonable facilities they afforded by the increased amount of traffic that would be furnished them.

The policy of the railway companies is

therefore both short-sighted and cruel:—short-sighted, because if farmers had the inducement to cultivate their lands for vegetables and small fruits, by the chance of a reasonable outlet, they would undoubtedly do so, and the railways would have the conveyance of the produce, which would be much greater in extent than the quantity received from the Continent, and furnish them with a large revenue from a source where they now receive nothing; cruel, because it is well known that the bulk of the money realized by home produce is expended in home labour, and the whole of it remains in the country for re-expenditure mostly in wages of other industries in some form or another.

But the most serious effect that the course of procedure has, is the deprivation of the people of the large supply of vegetable and fruit foods that would be raised and available for consumption if the railways faithfully carried out the engagements made by them, upon the strength of which the privileges they now possess was accorded to them.

To remedy the existing state of things it is advisable to insist upon railways conducting their operations upon the basis upon which they were established, and compel them to haul produce upon such reasonable rates and conditions,

as to allow of facilities for its disposal from the truck at the stations, and to take up such a position as would not only compel them to do so, but prevent them again, by means of any combination, acquiring a position of undue influence.

To enable arrangements of a beneficial character to be made, and ensure the establishment of a system that would render nugatory the efforts of any railway combination, and result in the establishment of reasonable rates for home-grown produce, it is advisable to pass such a general Act of Parliament as would enable local authorities to provide open spaces for use as markets, and to make connections with railways in their several districts, so that trucks with produce could be run direct into them, and their contents disposed of by the owners without incurring the cost of loading or unloading, and thus render the charge for terminal services unnecessary. Also provide such facilities as will enable local authorities to make auxiliary lines or tramways in their several districts, such lines or tramways to be in connection with the railways, and to be brought into working operation with them upon mutual satisfactory terms.

The effect of these auxiliary lines and open

spaces, which should be confined solely to home-grown produce, would be that the farmers in a district could so arrange that railway trucks could be loaded on or close to their farms, and by means of the railway communication, be run right into what would serve as a market with the least expenditure of labour and at a nominal cost.

A system on this basis could be carried out at little cost, and it would lead to the combination of farmers in a district to concentrate their supplies, in order to provide the regular traffic.

Collections of farm and garden produce sufficient in extent would thereby be gradually formed in the same areas, and could be despatched by the producers to the markets in the adjacent centres of consumption for disposal direct to the retailers or others.

A market of such kind in each quarter of London would bring the whole agricultural population of the adjacent country into direct communication with the consumer, and by their being brought into connection with the existing system of tramways, the saving in the expense of cartage and delivery, which are at all times serious items on the cost of vegetable foods, would reach a total of several

hundreds of thousands annually, a sum which while proving to be a saving to the community, would at the same time bring a large amount of nutritive food within the reach of the working classes of a better condition and fresher quality than they now receive, and largely increase the receipts of the agricultural classes.

The much debated question of Terminals should be adjusted in an equitable manner. Those in connection with the station itself should be abolished ; but as an equivalent to the Railway Companies for the concessions, all rates and taxes of an imperial or local character should be remitted, for it cannot be maintained for one moment, that a railway should pay rates, &c., upon their premises, and be compelled to give the public the free use of them on the other hand. It may be safely said that the rates and taxes are an indirect tax on the food of the people, and should not be allowed to remain in existence.

CHAPTER LIV.

CHARACTERISTIC FEATURES.

THE traffic in home-grown perishable foods possesses a remarkable characteristic feature in being largely composed of comparatively small consignments. This is not only the necessary outcome of our system of production, but promises to largely increase with the growing tendency to small holdings, allotments, &c. This traffic should not only be encouraged, but every possible facility should be furnished to enable it to develop itself; for in that system will be found the means by which producers and consumers will naturally drift into more direct communication with each other. And it is to aid the growth of this condition of things that it is advisable for such provision to be made that it will inherently develop a traffic by the facilities it furnishes with which producers can reach the retailers in outlying districts.

The short-sighted policy of the railway authorities is about to be brought under consideration,

and our purpose will be best served by attention being directed to the particular points that agriculturists in general, and vegetable and fruit-growers particularly, should endeavour to secure for themselves in the forthcoming revision of the charges and conditions of our railway system.

In this matter, so far as fruit and vegetables are concerned, facilities for their effective collection, safe transport, and speedy delivery, are of a much greater consideration than the actual charge made for the services rendered, but this should certainly be a figure within reason; but the principal object that the agricultural classes generally, as a body of producers, should seek to obtain, is a ready means for reaching consumers in all districts through the existing retail traders. For this purpose they should seek for the establishment of a "farm produce train," a service to be carried through, on the lines of the "parliamentary train" and the "van train," which was in existence for a number of years, and only recently abandoned. By the parliamentary train the passenger rates for one train daily was fixed by law. The van train was for parcels, and the rates were made by the railway companies themselves, being one-half the ordinary parcels rates with a

minimum of 6*d.* At the present time, a parcel traffic is in existence on all railways by passenger trains, and this is governed by radius of distance ; up to thirty miles being $\frac{1}{4}$ *d.* per lb. ; up to fifty miles $\frac{1}{2}$ *d.* per lb. ; up to 100 miles, $\frac{3}{4}$ *d.* per lb., with a minimum rate of 6*d.* for a parcel.

A moderate extension of this parcel system to packages of produce, with half-cwt. minimum and wider radii of 100 miles as a minimum and each 50 miles beyond, on the basis of the van train charge—that is, one-half the current parcel rates, would prove advantageous to farmers, and bring the railway a large and remunerative traffic.

This should be sought for, and would probably be conceded by the railway companies without difficulty as that is a paying one.

The time has arrived when the outcome of the protracted agitation upon which producers have been for years engaged is about to be dealt with by the Board of Trade, who have been appointed to deal with the subject as between the public and the railway companies.

It is therefore essential that the vast network of producers throughout the United Kingdom should in their several and separate spheres determine the actual requirements of their particular commodities, and then by

united action through their local and central organization, place themselves in a position to approach the Board of Trade in a tangible and effective manner, so as to be able to put forward and substantiate simple and definite claims in every instance.

To this end the agricultural classes should, individually, collectively, and promptly study the subject in all its bearings in order to see where their particular interest is affected, and how it may be remedied. Even then the contest is a most unequal one, for the railway companies are few in number, but united as one body, having an unlimited command of capital for their purpose, coupled with the best practical legal and commercial experience that can be procured. They also will receive the indirect support of all the vested interests that have grown into existence with and profit by the present enormous importations of food products that now reach us from foreign countries.

For these as opponents, so far as can be seen at present, they will be confronted, so far as farmers are concerned, by a disunited and consequently weak number of individuals, without any representative organization to determine what they should claim, or means to take the necessary steps to contend for their views.

The question of station terminals is still an open one, and the railway companies will without doubt have thus the opportunity to endeavour to surround all traffic with such conditions as will enable them to continue to levy the existing or similar charges on the goods placed with them for transport, while the farmers have not arrived at any definite conclusions as to what they require to improve their condition in this direction.

The result may be anticipated from the position, therefore, unless the course indicated is adopted, there is a strong probability that the past and present deplorable condition of things may, in a great measure, continue to exist for another long term of years, to the detriment of the great producing and consuming classes of the country.

Meanwhile good service may be done in another direction, which would in any event result in preventing the continual extension that is taking place of the condition of things from which we suffer. The great difficulty that has presented itself towards enabling any reform to be carried out for the general good has been the plea that has been set up, of the rights conveyed to them by their Acts of Parliament, and these the different companies apply every year to

extend and increase. So large are the rights thus annually assigned to them, that in 1887 they required an additional new capital of no less a sum than 17,628,000*l.* sterling, to carry out the additional privileges conceded to them for that year; and it appears to be a very great oversight to allow these continual and large additions to be made to our Railway system without making adequate provision for relief in the direction it is so urgently required.

Even by admitting that the Railway Companies have some rights in their existing Acts, that can be no reason why those conditions, which are now found to be detrimental to public interests, should continue to be handed over in the new Acts they apply for every successive session; on the contrary, the occasions should be utilized for properly obtaining some relief from existing difficulties.


To attain this end steps should be at once taken to prevent an extension of the present position which has arisen from past inexperience, by dealing with the future, and Parliament should be asked to enact a standing order that no railway Act of any kind or character should be passed for the construction of any new lines or the extension of any existing lines, unless a clause providing for a through truck and train

rate, a farm produce train, and the provision of Refrigerator Trucks for perishable foods, together with suitable provision for the connection of local lines and tramways, and effective regulations as to the conveyance and delivery of home-grown food products, was embodied in it. This, in any event, and an amended Schedule of rates, would stop further encroachments and lay the foundation for the adjustment of the existing differences and the groundwork of future legislation.

The provision of an effective and regular Refrigerator Truck Service, is a most important feature in connection with the food supply of the people, and should be made compulsory for railways to furnish, in order that the deterioration that takes place in all perishable foods may be arrested, and the consequent waste avoided.

CHAPTER LV.

ECONOMY IN PRODUCTION.

HE economy of food preparation is entitled to serious and full consideration from all classes, owing to the importance of its bearing on the national welfare. To ensure adequate results it requires to be dealt with in two directions, each of which is of a distinctive character.

Firstly. The preparation for distribution, which includes all operations while in the hands of the producer up to the time of its being marketed.

Secondly. The preparation for consumption, which deals with all the proceedings from that time, while in the hands of the distributor and the consumer.

At the outset it is curious to note a remarkable feature in connection with the subject, of food-preparation, and that is the utter unconsciousness of all parties occupied in the production, distribution, or consumption of foods to the striking want of organization into which

the present system has drifted, and the imperceptible, but at the same time enormous aggregate waste that now daily takes place in every stage and in all directions without being discerned.

After diligent inquiry for nearly twenty years in all directions, of "all sorts of men" and women, I. have yet to meet one who will admit that any improvement in our food system could be made as far as they individually were concerned or knew; neither could they suggest any substantial improvement in other quarters.

With respect to the producer and his operations, it is self-evident that the maximum amount of food material that can be secured at a minimum cost will have a corresponding effect not only on the individual wealth, but on that of the community also, a fact that is recognized in the trite, well-known, and far-seeing aphorism of the late Sir Robert Peel, "that he who makes two blades of corn grow where one grew before is a public benefactor."

Results from the economy of food preparation in the hands of the producer may be obtained in many ways, some of a scientific, others of a practical character. In the production of animal food many things have been discovered within the last few years that completely upset

the theories and practices of agriculturists in past ages. It is now found that animals may yield a larger amount of meat at a smaller cost during the early part of their existence than they would if fed and kept a year or two longer ; that is to say, that cattle grow more rapidly upon the same amount of food during the first two years of their life than they do at a later period.

A similar experience is also found in regard to sheep, and when the practice of "early maturity" is better understood and practised, the benefits to the farmer derivable from it will be exceedingly great. Then he will not only obtain a larger amount of meat at a smaller cost, but the enormous loss, now sustained by the waste of flesh in animals attacked by disease will be materially reduced, inasmuch as young cattle are not so subject to sickness and the consequent loss of weight and deterioration in quality as are older animals.

By the practice of regular and systematic feeding, animals not only yield a larger amount of meat, but the flesh is of a much improved quality and greater nutritive and commercial value. The old system of over-feeding, resulting in obesity and the production of a large amount of fat in layers of a nominal value for manufacturing purposes, is proved to be illusory,

and rapidly giving place to the production of "marbled meat," by which the fat permeates throughout the flesh, furnishing a food of the most palatable and nourishing character.

The housing of live stock in properly constructed barns or sheds, especially during inclement seasons enables the animals not only to retain all the flesh they have accumulated during the warm seasons, but it also encourages its regular development, and prevents the outbreak and spread of disease, by which an enormous amount of wasting or shrinkage at present takes place.

The storage and retention of farm produce for winter feeding, better known as the system of "ensilage," is a new and distinct feature in the economy of food preparation, which promises, when more fully understood and practised in connection with stall feeding, largely to affect the future meat crop of the country and the course of land cultivation.

The conversion of green crops into fodder by evaporation also proposes to furnish a large and economical supply of food for animals during winter, and encourage the system of barn feeding.

The manufacture of fresh fish scraps into a meal capable of being used as a cattle food

promises to open up a new and important feature in agricultural practice. As a matter of course our farmers at their market dinners will at the outset treat the subject with derision and sneers. Their fathers never did it, nor yet their grandfathers ; therefore there can be nothing in it. Doubtless there is an absurdity in connection with the matter ; but it is not with the fish or the meal, but with our isolated farmers who have allowed a practice that has been successfully carried on for ages in Norway carelessly to remain unnoticed and uncared for? Fish, when stinking, is used as a manure by farmers who are near the fishing ports on the coasts, but as a matter of fact fish is a most nutritive article of food, and while the supply of the refuse at many of the towns on our coast is practically unlimited, it is capable of being readily prepared so as to furnish a most valuable article of cattle food.

The conversion of Fish into Mutton and Beef admittedly sounds strange. The Highland Society's experiments, however, place the operation beyond doubt ; the marvel is the extraordinary change an unprejudiced thinker may discern as possible in the future by the successful introduction of this system and its general prosecution in the remote and outlying districts on the north and west coasts of Scot-

land and south and west coasts of Ireland, where fish of all kinds abounds. A new incentive thus presents itself to enable curing establishments to be profitably carried on at those places, thereby furnishing employment to the people and providing an additional source of home material for food supply.

The exhaustive trials that have been made of the system in Scotland leave no doubt that we are within reach of a new and practically inexhaustible supply of cattle foods, the utilization of which largely bears on the economy of preparation, and will allow considerable areas of land at present cultivated for the production of food for animals to be utilized in the production of food for man.

The increased production and better utilization of the milk yield for consumption, or manufacture into butter and cheese, furnish abundance of material for thought and practice. In this particular branch of supply the economy of food preparation is well recognized and practised elsewhere, and may be readily traced in the usages and customs of many countries in Europe and states in America, while several of our colonies are far in advance of our own farmers and graziers. Altogether much is to be gained by the adoption of the thrifty lessons

that are set before us by the people of other nations, and even our own people who are away.

Those few of the associations that have been formed in this country for making cheese and butter would greatly improve their position by combining to sell their produce, for the glaring fact in connection with their existence stands out prominently, that after exercising skill, enterprise, and industry in the production of a really good article they have been content to utilize the existing channels of distribution and placed their produce for sale in the hands of factors, where it has had to pass through the usual ordeal of excessive profit and numerous changes before reaching its destination with the consumer.

In the preparation of the products of our orchards and market-gardens we may readily see from others how the enormous amount of waste of material that at present takes place with us may be avoided, and in the future much profit secured.

Even in cereals, in which English farmers incline to the opinion that they can teach the world something, they themselves have much to learn.

The consumption of whole-meal breads, and oatmeal, the almost national dish of Scotland,



VIEW OF AN IRRIGATION COLONY,

PLATE 413

is comparatively unknown or unused in England, simply because the wheat and oats are not prepared in a form suitable for general requirements as human food, for which they are so well adapted.

An improved system of scientific irrigation, that may be readily brought into practice, would result here, as it has done in Australia and elsewhere, in bringing into profitable bearing many tracts of land now considered barren and waste. The annexed drawing of an Irrigation Colony, exhibiting every variety of vegetation and cultivation, conveys the most salutary possible lesson to our farmers, inasmuch as the sketch emphatically illustrates the great results that may be obtained from the intelligent practice of scientific irrigation. The fertile settlements of Mildura and Renmark are in a portion of the "Mallee Scrub" that a very few years since was looked upon as the "Sahara" of Australia, but which, by the practical utilization of the waters of the "Murray," has recently changed in character; and from being one of the wild wastes of Australia, the district is rapidly assuming a character in which it competes with the thriving and inexhaustible banks of the Rhine.

I am indebted to J. E. M. Vincent, Esq.,

the London Commissioner for the Australian Irrigation Colonies, for the annexed reports upon the marvellous change that scientific irrigation has effected in their districts, which furnish unmistakable evidence of its value to agricultural industry in all directions.

The Australian Irrigation Colonies.—(From the Adelaide (S.A.) *Observer*, Nov., 1888.)—The Earl of Ranfurly has become a large landed proprietor at Mildura. His lordship came to Australia for the first time about June last. On a visit to the irrigation colonies his lordship was so impressed with the successful operations that he purchased a large area, and induced some of his friends in England to do likewise, so that the earl and three others have now 200 acres between them. His lordship says of Mildura:—
“When my partner and I went up in June, the only buildings the place possessed were a boarding-house, a workshop, the *Cultivator* office, Williams’s store, and there may have been a log-hut or two. Now houses are going up in all directions; in fact, contractors are so busy that it is almost impossible to get them to even offer for a new building. There are two banks, post and telegraph offices, a manufactory or two, and a timber-yard. Next year many thousands of acres will probably be under cultivation.”

Mr. Speight, Chairman of the Victorian Railways, said:—
“I had never been near Mildura before, and as we purpose extending our railway in that direction, I seized the first opportunity for a personal inspection. I return greatly pleased, and, I may add, astonished, with what I have seen. The wonderful progress which has been made in a few short months is simply marvellous, and should at once convince even the most sceptical. What was a barren and unproductive country twelve months ago, has been turned into what I am inclined to predict will be one of the best

districts in Victoria. From Mildura I went to Renmark, and a very pleasant journey it was. Almost the same remarks can be applied to this place. At Renmark great progress has been made. The fact is, I cannot speak too highly of the irrigation colonies, for the example being set should be most beneficial to the whole of Australia. With a scientific supply of water, the climatic influences are such as will enable colonists to grow absolutely anything."

The following is a description of the Mildura Colony :—

Official visit to Mildura.—The *Australasian*, of December 8th, 1888, says :—"The Chairman of the Railway Commissioners (Mr. R. Speight), accompanied by Mr. Levien, M.L.A., and the Secretary for Water Supply (Mr. C. W. Langfree) left Melbourne on Friday, the 23rd of November, to inspect the Mildura Irrigation Colony. At Kerang they were met by a special coach, and driven to Swan Hill. Thence they proceeded in steamer to Mildura, which was reached at mid-day on Monday. The visitors were at once driven over the estate. Special attention was paid to the irrigation works and the pumping appliances. The number of colonists on the property is about 1000, and surprise was expressed that such progress had been made in bringing the land under cultivation. The area of land which is being operated upon in Mildura is 50,000 acres, and from what the members of the party observed they are confident that the operations of Messrs. Chaffey Brothers have determined the future of that part of Australia. The settlement is, in many respects, in advance of old-established districts in Victoria. The firm expect to have the pumping appliances ready in February, when they will be able to provide an ample supply of water for the use of the settlers. With the view to establish complete communication with the river ports, Messrs. Chaffey Brothers have ordered

from an English firm a river-steamer, to cost 3500*l*. It will have a draught of 13 inches. A second steamer which is to be purchased will only have a draught of 6 inches. By the employment of these vessels cargo will be carried up and down the River Murray during almost any period of the year.

The Melbourne Argus (Oct. 27) reports a visit to Mildura by its Special Correspondent, "TELEMACHUS," who writes :—
"The most sceptical critic of irrigation has but to stand on that hill beside the channel and look across the cultivated area to be convinced that a great work is in progress, and if gifted with the slightest particle of imagination he can look forward three years and see—

The wonder that shall be.

Each of these avenues will be lined with shady trees, as each of the paddocks will be filled with fruit. Moreton Bay figs, currajongs, pittosporum, and camphor laurel will be wafted across from leagues of orange and lemon and citron, apricot, peach, cherry, and vine, all in bloom."

Items from recent numbers of the Mildura Cultivator (the weekly newspaper published at the Irrigation Colonies).—
November 8th.—The visitor to Mildura, who saw what the place was like ten months ago, will now find plenty to interest and astonish him. When the year began Mildura was a wild and desolate mallee waste. The town contained two small buildings, and a blacksmith's shop, and a goods shed on the river bank below completed the list of structures. By no stretch of fancy could the place be regarded as lively. Now we see rows of houses extending in various directions, water flowing through the town, and the hum and bustle of business everywhere. Night and day the squeaking and crowing of this sucking metropolis gladdens the ears of its authors. The brisk, cheery chuckle of the traction engine tugging at the butt of a "bull" mallee, or drawing the immense scarifier through the fruit

lot of some hopeful settler; the rattling of carts scurrying hither and thither, the swishing thump of falling timber, and the tapping and clanging of axes and hammers—all go to make up a babel of sounds that shows there is business afoot. There is no scene like it in Australia.

Irrigation land in Victoria worth 80l. an acre.—A meeting of the Irrigation Committee of the Chamber of Manufactures was held at Adelaide, South Australia, on Tuesday, December 18th, Mr. J. J. Green presiding. The Chairman, who, with Mr. T. Hardy, recently returned from Victoria, where they spent a considerable time in visiting irrigation areas, and acquiring information on irrigation and water conservation generally, delivered an interesting address. Mr. Hardy described the effects of irrigation, particularly in the Goulburn Valley district. Wherever irrigation schemes had been started in the districts Mr. Green and himself had visited, the price of the land had risen considerably, and in many instances land that was less than ten years ago valued at only 10l. or 15l. was now worth about 80l. per acre.

Thus, while we see lands at home in close proximity to 40,000,000 people selling at 7l. to 10l. per acre, we find that lands in the sparsely-populated, remote bush of Australia realizing 80l. per acre, although money at home is worth but 3 to 4 per cent., while in the Colonies its value is 6 to 8 per cent. No stronger evidence can be adduced to impress landowners with the necessity of their doing something.

The better utilization of manure and sewage, together with many other points, properly form the basis for the practice of an economy in food

preparation essentially under the control, influence, and direction of producers, and from the adoption of which they may largely benefit themselves, while adding to the supply of available food for the people.

These and many other matters of detail form elements of study in connection with the preparation of animal foods while in the hands of the producer, which should receive the earnest consideration of all practical agriculturists.

The collation of the results of the experiences so gathered, and their general and systematic dissemination throughout the body of agriculturists in forms that they may be readily understood and practised, would lead to advantages being gained by those who carry them into active operation, to material additions being made to our supply of home-grown foods which could be profitably sold at lower rates, and to our gradually becoming independent of foreign sources for our food supplies.

Every movement made in this direction tends to bring about an advantageous result. Our industrial classes in all districts should use their best efforts, by expression of opinions and other wise, to encourage our farmers and induce them to move in the directions indicated, inasmuch as all benefits that accrue must ultimately reach them.

CHAPTER LVI.

THE COMMERCIAL PHASES OF DISTRIBUTION.

AGRICULTURISTS do not appear to understand or appreciate, that while it requires a purely practical and technical agricultural knowledge to breed and feed an animal, so that it will yield the heaviest quantity of the primeest meat at the lowest cost, that to convert the animal into the largest amount of money at the smallest cost is purely and essentially a trading affair that necessitates a number of practical considerations, all technical and commercial.

This difference between the agricultural and commercial conduct of the business will be apparent by a glance at the situation. The farmer, with his agricultural mind, takes his beast as it stands to be so many stone of meat, and disposes of it at a price per stone for the estimated yield of meat without considering hide, head, and other edible portions.

The commercial mind would view the animal as it stands as,—

1st. So many prime and inferior roasting joints ;

2nd. So many prime and inferior boiling joints ;

3rd. A number of edible items, such as tongue, tail, heart, &c.

4th. A quantity of material capable of profitable utilization as food ;

5th. Other portions useful for manufacturing purposes.

To the commercial mind it is clear that each of the items is consumable, and saleable in a separate direction, and that to divert two or more of them in a direction where only one can be beneficially utilized can only be done with disadvantage, and therefore it is most profitable to dispose of each of the items in the direction where it has the best value.

It would appear to the commercial mind that each part of an animal being equally nutritious, the discrepancy in value between different portions is a subject for rectification in some form, which in any event would terminate in advantage to the producer.

The commercial mind would further readily discover that while the trade purchased portions of his beast as " offal "—" clod and stickings "

and "timber"—that it sold them as "tongue, tail, heart, &c., gravy beef and stock meat."

The commercial mind would also be aware that the nearer an approach can be made to the requirements of the consumer the fewer are the intermediaries necessary for the distribution of the products. The consumer may be the purchaser of a single joint of meat for family use, or a half-pound of boiled beef for personal consumption, or he may be a manufacturer who requires some tons of bones, hoofs, or refuse, &c., or a large quantity of hides for his purpose.

The commercial mind would realize only one fact, which is, that the nearer he can sell to meet the wishes of his different customers, whether it be the small quantities for consumption or the larger quantities for manufacturing purposes, the more direct will be the transaction, the less expense and labour will be incurred in distribution, and the better proportionate result will arise on the realization of his beast, inasmuch as the broader the basis of arrangement for supply is made the greater will be the number of customers brought within reach.

For instance, if a farmer wishes to dispose of a beast alive, his customers are limited to the carcase butchers, of whom there are but a few

hundreds throughout the country. These he must approach directly or through dealers, but if he should wish to slaughter his beast and sell it as dead meat, he comes within reach of the wholesale butchers, of whom there are a few thousands throughout the country. If he advance a stage further, and will dress his meat into classes, so that the ribs and loins may go in one direction, the rumps in another, and the boiling joints in yet another direction, the circle of demand will be considerably extended, and he will be brought within the area of the retail butchers, who purchase what they require for their own particular trade.

If he will make an effort to advance one step further and attempt to meet the requirements of consumers, he is brought within direct contact of many millions of customers, all of whom are not only really willing and desirous but most anxious to buy what he has to sell.

Again, the commercial mind is acquainted with the all-important economic axioms, that "the supply of an article tends to create the demand for it," and "the demand establishes its value."

Thus, the slaughter of each animal involves a certain quantity of products capable of being utilized for manufacturing purposes ; but these

are comparatively valueless, owing to the cost and expenses of removal, as to own fifty beasts and to slaughter them in fifty different places does not, in a commercial sense, create a supply of these products, for although the material may exist in the different places, there is not sufficient in any one spot to induce traders to seek for it; and much that does exist is so small in quantity and comparatively so valueless that the labour and expense attending the collection would always be unprofitable. To slaughter the fifty beasts on one spot, however, would cause the material to be concentrated, and thus would furnish a supply in itself of sufficient inducement for buyers to attend and compete for it.

What is good and true in the realization of fifty animals is equally so in respect of all the animals that the farmers of the United Kingdom rear; therefore, what is required is for farmers to combine in their several districts and so to conduct the realization of their produce upon a commercial basis, as to avoid a large amount of the waste and expenses that they now incur unnecessarily, and to receive a portion of the extra price which the public now pay for their produce, but which now eludes the grasp of farmers.

This, by largely increasing their receipts, would tend to relieve them from their depressed condition, and make agriculture again one of the most thriving industries of the nation.

Being owners, farmers can readily and inexpensively unite in the application of the commercial principles we have indicated. The bases of such combinations would of necessity vary in character, the most suggestive being these:—

For the slaughter of live stock, by county organization; for creameries and cheese-factories, also fruit-growers, by district organization; while those for potatoes and heavy vegetables, should be by parishes.

Again, to obtain the largest amount of butter or cheese of the best quality from a given quantity of milk is a matter that requires a practical agricultural knowledge and experience of a technical character; but to pack the butter in the most effective yet economical manner for transport in a sound condition—to arrange facilities for its arrival at its destination—in the speediest manner and in the freshest state—to negotiate for the lowest rates of charges for the collection, transit, and delivery—and to obtain the readiest sale at the best price for the article when made—are commercial questions, and it is advisable that these phases of the

subject be simplified as much as possible, and presented to agriculturists for consideration, in order that they may become alive to the fact that their industry can only yield them adequate profits by being worked on sound commercial lines.

It is a remarkable feature in the social life of the people, that in a country claiming to be the leading commercial nation of the world, that all the simplest rudiments of commercial life should be so utterly ignored by its producers in every branch of agricultural practice. The direct and indirect losses that have been inflicted on the people generally by this thoughtless course of procedure reaches an enormous sum, and the sooner better results are striven for and secured, the more advantageous will it be for the country generally.



CHAPTER LVII.

AGRICULTURAL AND INDUSTRIAL UNION.

IF an examination is made of the course pursued by our own farmers of the present day, we find that in no case are any of the measures referred to adopted, but that in every case the systems they practise in the course of their business operations are unorganized, extravagant, and wasteful, in all instances a continuous and unnecessary expenditure of money, material, and labour taking place. This increases the cost of production, reduces the amount of the yield, adds to the charges and expenses of realization, and, as a consequence, diminishes the farmers' profits.

It is to be anticipated that the agricultural classes will not be prepared to admit the charges of reckless, negligent, and wasteful conduct thus brought against them; but by a careful examination of each of the details that have been fully dwelt upon as incidental to the production and distribution of beef and mutton at home, coupled with a comparison of the

manner in which similar operations are conducted abroad, the errors committed by our agriculturists, and the losses resulting from those errors, will be clearly apparent.

It is essential to bear in mind the widely different experience that has to be brought to bear in the consideration of this subject, inasmuch as all matters in connection with the production of meat require a large practical knowledge of numerous agricultural operations, while the details incidental to distribution are simply commercial.

It will be readily understood that to breed and feed a beast, so as to enable it to yield the largest quantity of meat of the prime quality at the least cost, is one matter; but to realize the animal in such a form as effectively to utilize the whole of its products and place them most directly with consumers, so as to acquire the highest possible value for all parts, is entirely different.

The primary and most important subject for consideration, beyond all question, is the readiest manner by which the *agricultural and industrial classes can be made to understand that their interests are mutual and inseparable*, that the success or failure of either, means the success or failure of both; that every member of the

community be fully impressed with the undeniable fact, that agricultural distress and trade depression are irrevocably bound together by a union of ignorance and distrust, that can only be broken by the spread of knowledge and the inspiration of confidence.

No amount of fiscal reform, no change of land occupation or tenure, or any other piece of political patchwork, will yield any permanent benefit. The subject is purely and simply a social and commercial one, that requires to be straightly looked at and dealt with by both classes concerned, and in the broadest possible spirit, for their own interests.

Let the agricultural classes once realize, that they after all, are the largest suppliers of the people, who can and do buy all that they will produce ; let them understand that our lands are fully equal to providing the greater portion, if not all, of the bread, meat, and other foods that we require ; and let them assure the people that if an adequate profit for their labours be awarded to them—that they are quite prepared boldly to make an effort to encounter all foreign competition upon its merits—they will thus, by the exhibition of the indomitable British spirit, at once command an amount of attention and consideration, from the industrial classes, that

cannot fail to lead to a mutually advantageous co-operation to buy and sell of, from, and to each other.

One result of such a distinct declaration would be to dispel the grave illusion existing in the minds of the industrial classes that their foods are to be specially taxed in order to benefit the agricultural classes.

Those who have watched the isolation of classes under which we have laboured in recent times, will have seen that the generation of that spirit of animosity that has been brought into existence between the agricultural and industrial classes springs from the impression wrongfully fostered that one class must be specially taxed to provide for the needs of the other.

It rests with the agricultural classes to act energetically, so as to dispel that illusion, which they may readily and successfully do, in competing with foreign imports, by the employment of the same measures and appliances that enable their opponents to reach our own home markets.

It must be apparent to any one who will take the slightest trouble to look into the subject, that the relative positions of home and foreign farmers are in close affinity with each other, and that it requires but a small effort on the

part of the British farmer to place him in an immensely superior position to the one he now occupies.

True, the Prairie farmer has cheaper land ; but, against that, there are many disadvantages, his labour is dearer, the average yield of his crop per acre is considerably less, while the expenses incidental to his remoteness from a market create a serious charge upon the receipts for his produce.

Let the British farmer once understand clearly, that it is alike his duty and privilege, to cater for the British workman, and let it be known that he is prepared to do this promptly, heartily, and ungrudgingly, and a great stride will be made towards the abolition of agricultural distress. Such a manifestation of feeling on the part of the farmers would be sure to elicit from the British working classes a prompt response that would be expressive and explicit.

The working classes have a keen sense of perception, rapidly acquire a knowledge of anything beneficial to their own interests, and they speedily act upon it ; but they have also an innate feeling of national pride that prompts them to support anything calculated to protect or develop the resources of their country.

Let it once be known that the farmers have

combined, and are ready and willing to supply the requirements of the industrial classes, with their own produce, and that they invite the working classes to purchase of them, and it may be taken for granted that their appeal will be responded to with avidity.

One thing is certain, that the disposition of home consumers is to partake of home-grown produce, even at a higher price than imported commodities, if they can be assured of its genuine character. There are few buyers throughout the country who would not pay at least a penny a pound more for English meat than for foreign; but meats are mixed, and the bulk of the imported meats are sold and go into consumption as home-grown.

The same may be said of bread and other articles. If two bakers' shops are opened next door to each other, one with bread made from home-grown wheat, and the other with bread made from foreign wheat or flour, and the matter made unmistakably clear, the home shop will be emptied ten times over before the shop with bread from foreign flour is partially emptied once, even should the prices of the former be somewhat higher.

Farmers and their landlords, with workingmen and their employers, may well deal with

the subject from one common standpoint, and consider how a working arrangement for bringing home producers and home consumers into close contact can best be brought about. Both parties have large organizations that may be usefully occupied.

Agriculturists have their Royal and County Societies, Chambers of Agriculture and Farmers' Clubs. The Industrial classes have their Trade Societies, Unions, Clubs, Co-operative Stores, and other bodies.

Let the representatives of both consider how they may take some steps to aid any efforts that may be made, by which the supplies of the one and the demands of the other, can be adjusted, so that a fairly remunerative price may be readily arrived at, for one to pay and the other to receive.

This once done, everything else is purely mechanical, and would of its own accord drift into its own proper form, and be developed by its inherent advantages, in the same ratio that other social movements have extended themselves over much wider areas than their founder ever dreamt of.

In no case is it a question of the introduction of capital; that is merely the middleman in another form to that in which he appears at

present. There is neither a necessity nor a value in a fluctuating price, whose existence is only maintained because some of the middlemen interested consider themselves qualified to obtain more than the current value for the produce they have to sell, while others think that they may possibly buy cheaper, but neither producer nor consumer is interested in this variation of prices, and when made merely receive a nominal amount of any alteration that may be made, the wages of working men varies but little through the year.

The disbursements of farmers are also subject to little change, both of which furnish good reasons for laying down a basis of prices for food products, that should be subject to no changes other than those arising out of, or incidental to the condition of crops owing to climatic influences.

What is required is a spread of the knowledge throughout the kingdom that the importance of consuming home produce is more to the interests of the working-classes than even to the agricultural classes, for the reason that whatever money is expended for home produce remains in the country, is largely expended in labour, and is ultimately re-expended in our own manufactures, giving re-employment to our own work-

people, and becomes an addition to the national wealth; but whatever is spent in food from abroad is so much money sent out of the country, and becomes a dead loss to it.

Our approximate expenditure for foreign meat is 15,000,000*l.*, for wheat 25,000,000*l.*, for butter and cheese 12,000,000*l.*, for flour 15,000,000*l.*, for green fruits 2,500,000*l.*, or about 70,000,000*l.* in all annually. When it is remembered that nearly the whole of the food, for which this large amount of money was sent out of the country, could, by the exercise of intelligence and industry, have been produced in it, then it may be imagined what would have been the difference in the condition of our working classes and agriculturists if this had been done!

The bulk of such amount spent in wages means abundance of food and ample employment, by which the money for procuring it may be earned—consequently, happiness, comfort, and prosperity to all classes of people throughout the country.

This then, before all other subjects, is one the importance of which should be noted by the leaders of the working-classes, who cannot too strongly urge upon them to take it into earnest and serious consideration, so that definite and practical results may be brought about.

CHAPTER LVIII.

BUTCHERS AND BAKERS—WHAT THEIR POSITION IS, AND SHOULD BE.

IN this way the services of the local tradesman, together with that of his *employés* and premises, may be profitably utilized with advantage and benefit to all concerned. The butcher, baker, and other tradesmen render society a mechanical service that is indispensable, and must be paid for in some form, but in the gradual development of our system of distribution, our shopkeepers have either become capitalists, or they are too numerous. In either case they as middlemen press too heavily on the cost of distribution.

In the first they enter the market to buy as cheap and sell as dear as they can, the result being an expensive competitive system, for which the consumer has to pay in the higher price, or the inferior quality of the goods, or in the second there is a far larger number of small shopkeepers than a locality can profitably support, and the heavy expenditure necessary

to maintain them has to be provided for by the producer or consumer.

A middleman in some form is necessary in food distribution, but middlemen are an incumbrance. The true position of the middleman is to be the agent between the producer and consumer, rendering a definite service for a fixed remuneration, and allowing his principals to make their own arrangements, to give effect to which he is simply the active instrumentality.

In this way there is no reason why the farmers who consign their cattle to a wholesale salesman at the market for sale on their account should not convert them into meat and consign it for realization to twenty retail ones, the usual commercial arrangements being satisfactorily made and controlled.

The evil effect of the present system has forced itself on public notice, and resulted in the formation of Civil Service and Army and Navy Stores in London and Co-operative Societies throughout the country districts, these in fact constituting nothing more than a system of concentrated shop-keeping, in the working of which it is found that by the concentration and combination of a number of businesses in one building and under one management, coupled with a cash system of trading, the expenses of

distribution are materially reduced. The development of this system, however, is proving disastrous to the local traders, who form a very useful and influential class of the community.

We have been described as a nation of shopkeepers—so indeed we are. Let us, as a commercial nation, remain so, which we may readily do by retaining and developing all the elements that tended to bring us to our present elevated commercial position among nations, and by the gradual establishment of an organized system of sale and purchase of home-grown produce between the agricultural and industrial classes, we shall be adopting a common-sense and thoughtful course in which the local shopkeepers in all districts could be utilized as the distributive mediums, but in all cases their position must be the distinct one of agency—a definite service being rendered for a given remuneration, and the result will prove that producers, distributors, and consumers will all legitimately participate in the sound, healthy, and beneficial commercial system that will thus be brought into activity.




BOOK THE THIRD.

FOOD PREPARATION AND DISTRIBUTION.

CHAPTER LIX.

PREPARATION FOR CONSUMPTION.

OOD preparation for consumption furnishes a wide field to the teachers of the people for the devotion of their time and intellect. In no direction are larger or more beneficial results obtainable at a smaller expenditure of exertion or would any task be more speedily and successfully accomplished, than that of showing the people the enormous cost of the wasteful system that they now pursue, and educating them up to a higher, better, and more beneficial standard of theory and practice.

To unreflective minds, the task may appear herculean, but my experience points out to me that, properly approached, no class will be found readier and more willing to give a respectful reception to those who wish to introduce to their notice any subject interesting to themselves than the English working-classes.

In no country will a people be found who will

more calmly listen to, in an unbiassed frame of mind, and more thoughtfully consider any subject that is submitted to them than the English artisans. They will then freely and frankly express their views and opinions, which invariably exhibit a marked concentration of thought denoting a high standard of intellectual education, independence, and self-reliance.

With an experience of twenty years, incessantly meeting them on the subject of their food supply, publicly and privately, in numbers and individually, in every direction and in all districts, I have, on all occasions, without exception, been received heartily, listened to respectfully, and the matter treated sympathetically by the men and their wives. It is therefore with the greatest pleasure I record the fact that during this long period I cannot recall any occasion where there was even a single expression of stubborn thought, the same as may be at all times heard at political meetings.

With this experience I am justified in assuming that the working-classes will not only earnestly consider any subject that is submitted to them, but will, with their wives and families, actively concentrate their energies and combine to carry out any movement that commands itself to their approval.

The supply of the food requirements of the

working-classes must take precedence of all other questions, as the most important and entitled to the first, fullest, and most earnest consideration, inasmuch as it is estimated that working-men expend 75 per cent. of their wages in food for themselves and their families. It is also estimated that those wages reach the sum of 300,000,000*l.* (three hundred million pounds sterling) yearly.

It consequently follows that for every saving of 10 per cent. that can be effected in any direction in the food supply will have a result equivalent to the increase of every man's wages by the sum of two shillings weekly for every pound he now receives. This will form an addition equal to 21,000,000*l.* sterling annually to the national wages sheet of the working-classes, an amount that would enormously add to their comfort, health and happiness, and at same time go far to abolish the depression from which trade suffers.

It may appear that 10 per cent. is a large estimate of savings, but the directions in which improvements can be effected are so numerous that, after mature consideration, I am inclined to the opinion that figure may not only be reached, but readily doubled or trebled, for, as in many instances results amounting to a sav-

ing of fifty per cent., or one-half of the present expenditure, may be easily attained, the general average saving should readily reach the figure named.

I fully realize the extent, and apparently incredible advantages to which these observations point ; but I do not feel that the largeness of the amount should in any way deter me from dwelling upon them and making them public ; at the same time I am satisfied that the successful realization of the views thus expressed depends upon the simplicity and explicitness with which they can be submitted to the people.

I am also fully aware of the enormous difficulty that would encumber the introduction and operate against the success of any system if it necessitated a serious departure from the ordinary usages and customs of every-day life.

Therefore, for the permanent attainment of the objects I have in view, I rely upon people doing just exactly as they do at present, but in a more rational and common-sense form.

For instance, if four different parts of a carcase of beef are taken, it will be found that each one is capable of preparation in a particular form in which it will be, in every respect, far in advance of the other three, these are the sirloin, the brisket, the head and the legs.

The sirloin, as a roasting joint, is unapproachable, but it would not compare with the brisket if corned, boiled and converted into a pressed beef, in which condition the brisket furnishes a marvellously palatable and enjoyable joint, when eaten cold—neither would the sirloin yield a brawn like the meat off the head, or a soup like that from the legs. The roast joint, the pressed beef, the brawn and the soups, are four distinct varieties of cooking, in each of which the particular portions of the carcase excel, and are most acceptable; thus it is by following this principle, and using the different joints in the manner that they are best adapted for yielding the greatest amount of satisfaction that the most beneficial results will be obtained.

The primary consideration of this subject is of importance, because meat forms the principal substantial constituent of each meal, and is the most expensive in character, therefore the advantages gained in its manipulation will exhibit itself in a marked degree where any judicious proceedings are taken in connection with it.

Divested of all scientific terms, and using only those of a domestic character, that will be everywhere understood by consumers, meat may be described as consisting of three ma-

terials, each of a different edible nature, according to how they are used. These are the lean, bone, and fat.

To obtain the greatest food value from meats, all the coarse or boiling joints of a carcase should be placed together to be dealt with as a whole, on the following basis: the meat removed from the bones—which, together with the fat, should be passed through a snipping-machine and reduced to a minced or sausage-meat—in this form it is capable of being readily cooked in every variety of ways, and will be found to be much easier of digestion than meats boiled in the joints, while the smaller amount of mastication necessary in its consumption gives them a greater value for old people and children, who generally have weak teeth and powers of digestion; the presence of the fat in meats so treated is of material assistance towards the acquirement of an economical meal, for while fat possesses too rich a food value to allow of its being taken by itself, when combined with the lean in the minced or chopped form referred to, it can be utilized in connection with cereal and vegetable foods of every description, all of which will readily absorb its rich constituents, attaining for themselves and giving to the fat a palatable character in com-

bination, which neither possessed separately ; in fact, it is in meats so minced and combined with either cereal or vegetable foods when properly prepared and blended in suitable proportions, that the most natural and palatable foods will be found, and the most substantial yet economical meals obtained.

The current wholesale price of the very prime quality English beef in the metropolitan market is 4s. the stone of 8 lbs., or 6*d.* per pound ; and for the past two years it is only on a few occasions that the price has been exceeded, and then only for a fractional amount, therefore, 6*d.* per pound is a fair figure to assume that beef can be purchased at by the side or quarter ; but that price includes the sirloin, rump, and all of the roasting joints, which are readily saleable at much higher prices.

If these joints are taken away from the carcase and disposed of at their ordinary value, the residue will be found to have cost the remarkably small sum, as the diagram shows, of but 3*d.* to 3½*d.* per pound. It will be admitted that such a price is one that permits of meats being largely used as a constituent of meals for all classes, and if they are dealt with on the lines pointed out, they will be well adapted for the purpose.

CHAPTER LX.

ECONOMY IN PREPARATION.

THE savings in food preparation that consumers may effect are two-fold : those that are derivable from a legitimate system of direct purchase, and those that may be obtained by a better system of preparation ; each class of these is distinctive in character and yields separate results. To take meat as an instance for the illustration of the first proposition.

It may be safely said that the wholesale price that farmers have received as the value of the bulk of the joints other than loins, ribs and rumps, of prime English meat that they have sold, consumed during the past three or four years has not exceeded 4*d.* per pound, while 6*d.* per pound is a low estimate to take as the price that the working classes have paid for the meat they have purchased, and then working-men's wives have had to go to their butchers with their money in their hands, in return for which they have been supplied with a

large amount of imported, inferior or diseased home-grown meat which has been passed upon them as prime English.

This shows that there has been an advance of fifty per cent. upon the wholesale price to bring it up to that of the retail price—while the difference in quality and condition cannot be represented by figures. Surely there must be a radical error somewhere for such a marked difference between the wholesale and retail prices of an article of daily demand.

Then, to take wheat as another instance, the wholesale market prices have been 30s. to 32s. per quarter, which after allowing all costs for manufacture and baker's profits, should yield pure bread at $3\frac{1}{2}d.$ per 4-lb. loaf, but in few districts has bread been purchasable at less than $4\frac{1}{2}d.$ to $5d.$, and then it has been a fictitious article made from inferior flour and other fraudulent materials.

In vegetables, potatoes have been from 2*l.* 10s. to 3*l.* per ton in the wholesale markets, which is a little more than a farthing to three-eighths of 1*d.* per pound, while their retail price has been one halfpenny per pound, or 3 lbs. for 2*d.*, and so on through the whole range of articles of food that enters into consumption of the working classes, the variations between the

wholesale and retail prices ranging from forty to fifty per cent., and sometimes even more.

By management these large margins of prices could be advantageously made divisible between the two parties, and would readily be so if means were adopted by which the two bodies would undertake to sell to and buy of each other.

But unfortunately our farmers have yet to learn the value of combination in the disposal of their produce, and the facility with which it may be simply and successfully adopted by them with marked advantages to themselves.

Whenever this is made unmistakably clear to them, and they discover the benefits derivable from the powers of organization and put them into actual practice, they will find that the working classes are partly prepared to meet and aid them in their object, inasmuch as in many of the country districts they have for a long time past co-operated with each other for the purchase of their requirements, which at present they can buy more readily from foreigners than they can from home producers.

In London there is comparatively little co-operation among the industrial classes, but the middle classes have their stores, which from very small beginnings have expanded to

gigantic proportions, and furnish ample evidence of the value derivable from the combination of individuals, to carry out general principles for the advantage of particular interests, and they would without question carry out their operations in connection with farmers if the opportunity were offered them for doing so. But this the farmers have not yet put themselves into a position to do, but they continue to isolate themselves within their own fences, and to send their produce in all directions for disposal, packed in a manner and form as widely separated from individual requirements as possible.

Our farmers suffer from the illusion that they know how to manage their business. This is a great mistake. They require to go abroad to see how things are managed there, and after seeing the cheese factories of Canada, the creameries and condenseries of New York, the French farmers of Florida, and the abbatoirs of Chicago and St. Louis, they would arrive at the conclusion that they had much to learn.

CHAPTER LXI.

THE MASSES AND THEIR MEALS.

IN illustration of the second proposition, it may be said that in the preparation of foods for consumption, the savings to be effected and the benefits derivable in every direction are numerous, and although each by itself has an insignificant and possibly imperceptible character, yet in the aggregate the results are large enough to prove advantageous, and to yield a conspicuous result in every household.

As at present arranged the food of the working classes is singularly monotonous. It is indeed strikingly illustrative of the menu of the Australian digger at a new rush in the golden days of the fifties, when one animal, to furnish variety, was on different days designated in turn, ram, lamb, sheep, and mutton, and was cut up from head to tail, into one uniform joint—chops—and placed in the one ever-at-hand cooking-utensil, the long-handled frying-pan.

As a rule, the working classes for their dinners have a roast joint on Sundays, a portion of which is eaten cold on Monday, and the remainder hashed or stewed for the Tuesday.

The rest of the days are devoted to various small inferior joints, the husband at times taking to his work a little of something cold for his dinner or purchasing a miserably small mutton chop or beefsteak at a large proportionate price, which is cooked at a neighbouring tavern or coffee-house, the total expenditure compared to the nutritive value obtained being most excessive; or it may be that the man lives within half a mile or so of his work, and has a wife who will provide a meal for him, in which case he will run home, take a hasty meal and hurry back to his work, the dinner-hour, instead of being one of rest, proving a time of continuous hurry, excitement and exertion, which diminishes the value of the food, and must ultimately affect the nervous system and health of the man.

But this only partially exhibits the waste of this pernicious system; for the wife has not only spent some time during the morning in procuring the material for the meal, but its proportionate cost on the early or middle weekday is more than on the market-day, when

the cutting butcher makes special arrangements for his Saturday's trade.

Added to which the small amount of potatoes, or possibly other vegetable procured, is paid for at an excessive proportionate rate; a large percentage of waste takes place in the preparation by hand, and there is a comparatively serious expenditure of coal, necessary to cook the food. Altogether, the money, time, and fuel expended in the procurement and preparation of the simple and often insufficient family meal during the week bear a larger proportion to the result obtained than they do on the Sunday.

It will be at once suggested that working men have not the means and cannot afford to provide themselves with a meal of the substantial character of the Sunday's dinner every day in the week; but this upon examination will not be found to be the case; substantial meals may be had on weekdays at a small cost if they are desired, and an effort be made to obtain them.

It should be understood that the reduced cost of the Sunday's meal is largely attributable to indirect organization and concentration. Shop-keepers in working-class districts provide more largely, and sell at more reason-

able rates, on Saturdays than on the other days of the week; and the neighbouring bakers' ovens, owing to the larger supply of dishes for baking on Sundays, furnish the means for cooking at a nominal cost on that day.

Why should not this indirect concentration be definitely organized, and as much attention be given to the preparation of the weekday meal as is given to that of Sunday? If that were done, the working classes in every district might readily be provided with substantial, nutritive, savoury, and palatable meals at a nominal cost on all days.

This is a self-evident fact which it is necessary emphatically to impress on people's minds, in order to ensure for it the adequate amount of attention, that its important bearing on comfort and well-being in every-day life deserves.

The foregoing remarks apply to only one class of working man, being the regularly and fully employed skilled artisan, who may also have a boy or two at work, earning something and contributing towards the maintenance of a comfortable home.

There is the important and large class of unskilled labourers, many with irregular em-

ployment at something like one pound per week when at work; what they have left for food after paying for rent and clothes must be a remarkably small sum, how they manage to keep themselves, wives, and families on this narrow margin, and what particular foods they do procure to eke out their existence, is an inexplicable puzzle to every one.

Certainly what they and their families obtain to eat can neither be good in quality nor great in quantity, and any measures that may be taken with the view of lowering the price or improving the quality of the foods that are disposed of in this direction are entitled to the warmest and heartiest support of those holding a better position among the industrial classes, who should for their own sakes afford them every encouragement.

There is another large section of the industrial classes fully employed whose foods are susceptible of great improvement. The large number of women and girls that are employed in the industrial establishments of the Metropolis, mostly in the city and on its boundaries, do not obtain a regular meal, as it is so understood, but at a given hour they will get a bit of something to eat; more often than anything else it is a piece of fried fish, anything but

fresh, with a piece of bread and a cup of what is called tea, the cost of which makes an inroad into the amount of their weekly earnings. Unfortunately there is an utter want of organization or system in the supply of foods to the employés of most establishments, and a condition of things that is capable of ready and beneficial remedy, is allowed to drag itself along, with the result that the classes concerned are gradually becoming constitutionally debilitated and physically incapable of resisting the attacks of disease to which all are subjected. These distressing privations have made themselves painfully apparent to those of our scientific authorities who, making sanitary and social science a study, are capable of arriving at conclusions based upon the experiences of their practical observations. It is evident from the statements of these authorities that the effects of the poor living of the industrial classes in towns is visible in the change of physique that is gradually being brought about among the bulk of the people, more especially among the female employés.

It is said that the result of this degeneracy of race may in a few generations make itself still more plainly and unmistakably visible. This subject is clearly a national one of the highest importance, and should impress

itself on employers and employés, who should use their utmost efforts to bring about a system of combination by which substantial meals could be supplied to all employés, male and female, at an economical rate at the places of employment. This is largely done in all establishments abroad, and yields enormous benefits to the employés. It is capable of proving equally beneficial in our industrial establishments of every kind, and would be most advantageous where adopted.

Circumstances in connection with most establishments vary, but these may be readily provided for if reasonably considered.



CHAPTER LXII.

DEFINITION OF MEALS.

IN order that the matter may be fully and clearly understood, it is essential to take a definite point of departure, and determine—first, what the extent of a meal is; and, second, the relative cost of its component parts.

“Meals” is a widely indefinite term; they may vary in character and extent—from the punishment diet of the refractory prisoner, with its minimum amount of grains of nutrition upon which life may be sustained, to the unlimited quantity that would be gorged by an unmitigated hungry glutton let loose upon a savoury supply of nicely cooked viands of all descriptions.

In both cases calculation might be made upon a common basis, but such calculation would thus furnish no satisfactory information, and would be positively misleading.

As a standard for estimate, an abundant and substantial meal for a working man in full employment should be set down as two

pounds of solid food material, divided as follows :—

One half a pound of meat without bone, one half a pound of flour or other cereal, and one pound of cleaned vegetables, with the necessary spices or condiments.

Taking this quantity for the husband's meal, and averaging a quantity equal to one-half of it for the wife and one-half for two medium-aged children, it will be found that a legitimate, reasonable, and liberal foundation is furnished for the material of the daily dinner for working men and their families—one, in fact, that is seldom exceeded in any quarter, and never reached in many.

The cost of these materials, according to the present and usual wholesale market prices, which vary but to a slight extent, of the different articles, would be as follows :—

$\frac{1}{2}$ lb. prime English meat, boiling joints at 4d.	
per lb.	2d.
$\frac{1}{2}$ lb. of flour. Wheat 32s. the quarter, yielding	
flour at 9s. the ton	$\frac{1}{2}$
1 lb. vegetables. Potatoes, carrots, onions, or	
other vegetables at 60s. per ton	$\frac{1}{2}$
Spices, condiments, &c.	$\frac{1}{2}$
	<hr/>
	3d.

giving two pounds of solid home-grown food material of the best quality and condition for

threepence, with imported spices and condiments added.

These ingredients constitute the basis of cookery, and are capable of conversion in every known edible form into which dishes are prepared, and furnishing soups or broths, baked or boiled dishes, puddings and breads, in endless variety.

But the prices quoted are not the net prices received by farmers, inasmuch as they are subjected to reduction by the amount paid for railway carriage, and also by the market dues, tolls, salesman's commissions, and the other charges incidental to realization. So that any improvement in this direction would result either in a still better price being received by the farmer, or a cheaper price to the consumer.

From the above-named figures it will be seen that we are brought face to face with the plain and unmistakable fact that the actual cost of the material from home-grown sources for a substantial meal, at the present wholesale market prices for produce, is 3*d.* only; and, in spite of this extraordinary fact, the major portion of the millions of the metropolis and manufacturing districts are poorly fed.

Regarded from this point of view, it must be evident to all minds who take an interest

in the social welfare of the people that something is wrong somewhere, and that the thorough rottenness of the system must be easily discoverable if sought for. This feature, thus presenting itself in its most glaring aspect, cannot fail to command the earnest attention of the working classes themselves; and if the pernicious disease together with the remedy can be once placed before them in a clear and unmistakable manner, it will take only a short time to bring about a speedy change that will amount to little else than a social revolution, which will be effected in the means and mode of living of the people, coupled with an unexpected marvellous and beneficial change in the financial resources of home producers, consequent upon a speedy and direct demand for the produce they have been engaged in producing.



CHAPTER LXIII.

WORKING MEN'S VIEWS.

BUT, in approaching working men, it is necessary not only to recognize their independence of spirit and character, but also their utter helplessness to do more than to appreciate, sympathize with, and support any measures that may be submitted to them for the benefit of themselves, their wives, and families. Their concentrated adhesion and support, however, once secured, is ample, for all practical purposes, to ensure a permanent success.

The difficulty to deal with in connection with the subject arises with the producers, and it is from their system of selling in bulk and indirect distribution that the difficulties spring; to meet them, efforts should be directed to bring about a more direct and simple system of sale in order to attract purchasers, which would result in advantages to both.

The fact stands out prominently, that while the bulk of our working classes are poorly fed,

our own agriculturists, although surrounded by larger groups of consumers than will be found in similar areas in any part of the world, suffer from such an unbearable depression, that lands are gradually going out of cultivation, for want of remunerative results, while the agriculturists of distant countries destitute of consumers can profitably supply our markets with their produce, their industry prospering and rapidly developing itself in numerous directions.

It forms no part of my object to deal with the many practical subjects incidental to production, from which largely improved results are obtainable at a minimum expenditure of labour and material. These are wide matters that require technical knowledge and personal experience for effective treatment; but the commercial features of production and realization are distinct businesses, and may be better understood by being separately dealt with.

To breed and feed a beast so that it may yield the greatest quantity of prime meat at the smallest cost is a practical subject for the agriculturist; it involves a special knowledge of particular matters, such as early maturity, the relative value of foods, barn feeding, covered sheds, and other incidental matters; but to realize the full value of the beast at

the smallest cost is a matter requiring commercial experience in all its details.

Also with wheat, to obtain the largest yield at the smallest cost involves consideration of soil, manures, rotation of crops, &c.; but to place the produce of cultivation on the table of the working man, in the shape of a loaf of bread, pudding, or a dumpling, is a commercial matter surrounded with technical considerations at every stage.

This is by no means a question of the provision of capital. Farmers have their produce on sale, and they pay others to dispose of it for them. On the other hand, working men go to market with the money in their hands and pay cash for what they purchase. It will thus be seen that the subject reduces itself to one of combination and arrangement on both sides.

The industrial classes cannot, however, buy from the agricultural classes until the latter have placed themselves in a position to supply them with what they desire, when they require it; and the agricultural classes cannot reserve their produce for sale to the former until they have placed themselves in a position to purchase what they wish for; to bring about a definite result, the matter must be dealt with in

a specific and particular manner, and not in a general way.

As an illustration of the position, it may be said that Farmer Giles has a couple of sheep to sell, while Bill Smith wants to buy a chop for his dinner; neither can wait the convenience of the other, and until something be done that will meet the convenience of both, matters must go on as they are.

But this should not be long, for there are men of "light and leading" in every district who can direct and control matters from commercial stand-points. These are the landowners and employers, who respectively command the confidence of their tenants and *employés*.

They could materially aid a movement for the formation of organizations for the sale and purchase in their respective districts and establishments, but unfortunately neither party cares to move unless solicited, and the reason for this is not far to seek by those who are acquainted with the natural characteristics of the parties, and especially the indisposition of farmers to step out of the course they have always followed. This would lead them to view with suspicion any attempt upon the part of the landlords to take the initiative and even in

effecting a needed reformation. The intention of the landlords would without doubt be misinterpreted, and possibly interested motives would be attributed to them; while it is well known in many workshops, that if the employers were to take the initiative in any movement, however well-intentioned they might be, this would be resented by many of the *employés* as an interference with their rights.

So far as the farmers and working men's personal interests are concerned, they must act of their own accord, and request their landlords' and employers' support and influence in the effort to carry out the reformation, and if the farmers in a few districts, and the working men in a few establishments were severally to move in the matter, the groundwork would be laid by which possibly some really effective steps could be carried out.



CHAPTER LXIV.

CHILDREN'S DINNERS.



THE beneficial provision of children's meals embodies an interesting subject for consideration, as it furnishes materials for thought, wider in extent and more diverse in their nature than are to be found in connection with any other matter identified with our social existence.

A "child's dinner" as provided in some quarters will be found to be one of the most minute commercial transactions it is possible to conceive, while "children's dinners" are inseparably connected with the meat supply of our own agricultural industry, which is, without exception, the most extensive in sterling value of any one single industry to be found in the nations of the world.

Dinners for the children of the nation are but the multiplication of a dinner for a child, while meals for parents are but additions to those for their children, and thus the consideration of the whole subject of our food supply inevitably

arises in connection with the matter we have met to think over and discuss.

That each detail may be adequately dealt with, and a basis laid for its future consideration in other directions, I propose to deal separately with the several departments that are incidental to the supply of a meal. By this means the experience of those who have given particular attention to these special subjects may be elicited, and conclusions of a valuable character arrived at.

Possibly there may be some readers who will think that the ground proposed to be taken is wider than they have any interest in, and I would at once destroy any illusion existing in that direction by submitting that it is advisable to consider the subject of children's dinners as a whole, and not for any particular school, parish, or district, for no system can be considered successful unless it can be made applicable to and utilized by those engaged at every school or dining centre throughout the kingdom.

An experience of over a quarter of a century has taught me that the system of our food distribution requires to be dealt with under four distinct heads, each of which is different in character, these are :—

1st. The purchase. 2nd. The preparation. 3rd. The cooking. 4th. The distribution of the material for the meals.

And it is under each of these heads that I propose to direct attention, the ends I wish to attain being to demonstrate that—

1st. An abundant supply of home-grown meat and other foods are obtainable at very low prices.

2nd. That they are capable of being prepared for consumption so as to yield much better results than are obtained at present.

3rd. That they can be effectively cooked in a simple and economical manner.

4th. That they may be distributed so as to be promptly delivered in any and every direction, to satisfy the wide and varied requirements of every class of consumer.

One point will be generally admitted by all who have given attention to the subject, and that is, if an abundant supply of meat can be obtained at a moderate price, that a very great stride will have been made towards the provision of children's meals of a substantial and nutritive character, and it is more especially to the supply of meat that I propose to direct attention.

The principal anomaly in connection with the subject exists with meat, which is, without

question, the most important item in the national dietary. So much is this the case that the nature, habits, and taste of Englishmen demand a large supply of animal food for their actual requirements; while the value of our annual home-grown meat crop, reaching a money value of 90,000,000*l.* sterling, constitutes it the most extensive article of our agricultural industry. It will thus be seen that the permanent supply of an adequate quantity of prime fresh meat, at prices that bring it within reach of the working classes, and the consumption of that supply from home sources of production, upon conditions that leave our farmers a profitable result for their labours, are objects, the successful attainment of which will contribute so materially to the national health and wealth that their consideration claims a priority before all questions identified with our social welfare.

Wide, broad, and deep as the subject undoubtedly is—it cannot be dealt with in any direction without affecting points of the smallest description and character, inasmuch as, however great the gross production of meat may annually reach, its distribution ends in transactions of an individual character, of which the school-pupil's dinner may be taken to be an item, although a small one

although it participates, to its relative extent, in any improvement that can be made in that direction. At the same time, the remarkably small transaction I have named has an importance of its own, for no improvement can be made in connection with the meat portion of it that has not a relative effect upon the whole meat supply of the country; as the same advantages that can be added to one individual meal are equally applicable to the meals supplied to all the children throughout the country. Thus, in the consideration of the subject, its vast extent, together with its diminutive character, are at the same time before us.

Farmers of foreign lands may compete with each other in supplying our markets with wheat, and derive profits by doing so, even at low prices; but with respect to meat, all things being equal in regard to realization, farmers from abroad cannot compete with our own in the supply of that article to our people.

The time has arrived when the actual position of our home-grown supplies of animal food should be thoroughly understood by all classes of consumers; inasmuch as that commodity forms such a large portion of the expenditure of all households, that any advantages that may be brought into active operation must result in marked

benefits in every direction. The general impression is that meat is in short supply and dear ; the actual facts are that meat is abundant and cheap ; and if once it can be secured for children's meals at the current rates at which it is sold in the wholesale markets, then they may be substantially fed at a very nominal cost.

What might be done to the advantage of our school-children's dinners, may be seen from the actual present position of the meat question, so far as consumers are concerned, which may be clearly understood from an examination of the annexed diagram of a bullock, which shows the different joints in a carcase, with their weight and relative value, upon the basis of the wholesale price of four shillings the stone, or sixpence per pound by the carcase, that being the average wholesale value of prime English beef during the past two years ; and at the same time may be seen the average retail prices of the different joints, to allow a butcher a profit of one penny per pound upon its resale.

Diagram of a Bullock of 800 lbs. Carcase Weight, showing the average weight and designation of each portion of the carcase, with their relative wholesale value, at the wholesale market price of 4s. per stone, or 6d. per lb., and the relative retail values of the salable portions of the carcase, to allow a Butcher one penny per pound as a profit on the sale.

CHAPTER LXV.

ABBATOIRS—BARROW.

THE [unfortunate position into which the farmers have allowed their meat supplies to drift, is strikingly apparent when attention is directed to the facilities that exist by which they could extricate themselves from their unprofitable position without any trouble or expense, but simply by organization, and it is scarcely creditable that such a condition of things could continue in existence for the period they have done. In different parts of the country abattoirs have been erected, where the system of slaughter could be carried out by the farmers themselves did they possess the slightest amount of cohesion or confidence in each other, but these facilities remain neglected and unused so far as the farmers are concerned. Some of the abattoirs have refrigerating machinery of the most improved character, and chilling chambers replete with all the latest appliances that render them complete for the reception of live stock, their slaughter, and the retention or

distribution of the meat direct to the retail butcher or co-operative store ; but these remain vacant and unused, while our farmers wring their hands and whine about the distress they suffer from.

As definite and unmistakable evidence of this subject, an instance may be quoted of the existence of facilities by which the farmers of the district, without the expenditure of a single shilling of capital, could have the use of an establishment that would enable them to realize from four to five pounds sterling more on every bullock, and a proportionate sum upon every sheep and pig they have to dispose of than the amounts they now receive.

In the North, at Barrow-in-Furness, cattle-lairs, slaughtering-houses, and cold storage-chambers have been erected at a cost of upwards of ten thousand pounds sterling, but although they have been completed several years, they have never been used for home-grown stock.

LIVE STOCK IN THE COUNTIES SURROUNDING
BARROW-IN-FURNESS.

	Cattle.	Sheep.	Pigs.
Cumberland . .	137,475	480,849	26,029
Lancashire . .	241,375	315,965	46,725
Westmoreland . .	63,322	334,978	4,731
York, North . .	162,462	638,320	48,990
York, West . .	264,876	646,809	71,887
	<hr/> 869,510	<hr/> 2,416,916	<hr/> 198,362

The annual supply of live stock for consumption from the counties named, is upwards of 200,000 cattle, 1,000,000 sheep, and 150,000 pigs, the whole of which, if conveyed to and slaughtered at Barrow at the cost of a few shillings per head, would give the farmers of the counties named an additional profit annually of at least one and a quarter million pounds sterling, and bring a large supply of additional good home-grown meat within reach of the factory hands, mechanics, and miners of the counties named at a lower price than they now pay.

Other parts of the country have similar accommodation which could be utilized by the farmers of the respective districts with marked advantages to themselves and the consumers in the vicinity.

Then again, Dublin may be cited as an instance of how the public are made to suffer by the conduct of the few who have a vested interest in the perpetuation of things as they are, instead of as they should be.

The corporation of that city erected abattoirs for the use of their cattle-traders; they were constructed on the boundary-line, but instead of extending inside the line, they are outside of it. As a consequence the butchers laugh

at the corporation and their abattoirs, and decline to use them, for being outside the boundary the bye-laws cannot be enforced.

If the farmers of the northern counties were to form committees for themselves and arrange to conduct the slaughter of their own live stock at the Barrow abattoirs, they would not only promptly benefit themselves, but, if effectively conducted, it would lead to the transformation of the whole system of meat distribution of that part of the kingdom in an incredibly short space of time.

The beneficial results that would spring out of the general practice of the course thus pointed out are numerous, and have been frequently referred to in previous chapters, therefore it will suffice at this point to summarize them on the part of the consumer and producer, by pointing out how a large quantity of prime quality meat readily usable can be brought within reach of the one—at a comparatively low price—while the commercial value of a carcase is materially increased for the other. So simple is this experiment in execution, yet so far-reaching in its results, that it requires but a small effort to practically work out the matter, so that it may be readily understood by the most obtuse minds; thus if a given

quantity of the different portions of beef, say seven pounds of rump at 10*d.* per lb., and the same quantity of neck at 4*d.* per lb., are taken, and after removing the bone, each part minced into a sausage-meat, then it will be readily discovered that both portions have an equal edible value, but that while the prime parts retaining all their nutritive characteristics have lost nothing by the operation, and can be cooked in various ways, the hitherto undervalued portions have been brought up to their nutritive level, materially increased in commercial value, and can be cooked in the same way as the prime meat with similar results.

It will thus be seen that in the preparation of meat for consumption, marked results are readily obtainable by the simple and inexpensive means of converting all the varied, and what are unwarrantably termed coarse, meats into meats of one uniform character, when they will have an equal commercial and dietetic value to the most sought-for portions of the carcase.

A means thus presents itself by which, at the cost of a few shillings, any one may possess an effective little contrivance that will enable them to provide themselves with dishes of every known variety from meats that have hitherto been neglected, and are procurable at remarkably low

rates, while for a few pounds producers may procure one of the machines of sufficient capacity to chop up all the coarse joints that would be obtained from one hundred carcasses per day—which in its new form would have an increased selling value equal to three pounds per beast.

The inevitable result would be the same in this country as it has been in every district where the dressed beef business has been established in America, viz. a higher price for live stock and a lower price for meat. This seeming anomaly arises out of the great advantages that are inherent in a dressed-meat trade coupled with the concentrated slaughter of live stock.

The following gives an idea of the extent of the daily operations at the abbatoirs in America, which show that the number of cattle slaughtered daily range from 500 to 1000 head in each establishment; the four firms named are at Chicago, but there are several others there also at St. Louis, Kansas City, and other places :—

Swift Bros. & Co.	331,550
Armour & Co.	253,000
G. H. Hammond & Co.	140,000
Fairbank Canning Company	120,000
Total number of head	<hr/> 844,550

CHAPTER LXVI.

WHEN TO COMMENCE.

HOWEVER much I may be satisfied that, by the practice of a different course of procedure upon the part of our farmers, beneficial results would be acquired by them and by consumers generally, I feel that the object under consideration will be best served by dealing with the present instead of the future.

It is not on what may be done next year, next month, next week, or to-morrow, but what can be done to-day in the way of providing substantial meals at largely reduced cost, so as to bring them within reach of the poorest of the community, that interest is generally centred; I will therefore point out how any quantity of the best quality meat may be procured at a low price, for that article forms the principal cost of all meals.

Great results often spring from small causes. It may appear strange, but it is evident to me that the organization of the various managers

interested in the provision of children's dinners into a body, to make combined purchases, would largely contribute to the establishment of the system of home slaughter by our farmers, inasmuch as from the outset they would have a demand for the boiling joints of their meat, and thus be independent of the butcher, flesher, and victualler, who, in turn knowing they could procure the prime joints they required without being called upon to take the boiling joints, would gladly enter into competition for them. At the same time the children's meals would be supplied from prime home-grown boneless beef, which, if fairly purchased at its current market value would not cost more than 4*d.* per pound.

Thus the organization with little effort would effect a twofold object of no ordinary character, as at the same time it would supply substantial meals to the children at a nominal cost, and would aid in establishing a system that would place the most extensive branch of the agricultural industry of the country in a successful and prosperous condition.

The Industrial Co-operative Societies of the country might at the same time effect an object of a similarly beneficial character for their Members and the Farmers. There are at pre-

sent about 1400 societies in different parts of the country, who have enrolled close upon one million members; their combined purchases reach 34,000,000/. sterling annually, three-fourths of which is for food, but very few of the societies have been able to dispose of fresh meat to their members.

The suggested formation of a centre for the slaughter of stock and sale of meat at Barrow-in-Furness would enable them to do this with marked benefit to their members, and great advantage to the agricultural industry of the country.

It is a duty of no ordinary character that thus devolves on those who have the conduct and management of Dining organizations and the Industrial Co-operative Stores; they both represent consumers, and by acting in a collective capacity, the aggregate quantities of meat they may influence into consumption in special direction, is so extensive in quantity that it would go far towards aiding the establishment of a system by which producers and consumers would be brought into more direct contact, and the numerous middlemen that the present system of meat distribution has brought into existence would be superseded.

CHAPTER LXVII.

ECONOMICAL COOKING.



THE system that presents itself—as the simplest in form, the most useful in practice, and the readiest to bring into active operation, so as to enable measures to be profitably carried out, by which all the difficulties incidental to the present situation may be dealt with and overcome—is one that aids the acquirement of the greatest economy in the preparation of foods for consumption, and by which facilities for their distribution are utilized, so that meals may be provided and rendered available as and when required in all directions, and under most circumstances, in a perfect and fresh-cooked form, with a minimum expenditure of fuel. These great results may be attained by arranging for the collection of the necessary food materials at defined central kitchens, where they may be prepared for cooking, and delivered in that condition after the ingredients and condiments necessary for one or more meals have been placed direct into the

vessel in which they are intended to be cooked, and in that way despatched to the place of consumption, where they should be cooked.

The appliances for cooking would naturally vary in accordance with the surrounding conditions and requirements of those for whom the meals are intended ; but in no case does any difficulty present itself that cannot be readily overcome.

The advantages secured towards the attainment of the desired result by the adoption of this course, are—

1st. The food material can be purchased in bulk quantities, by which all the benefits of wholesale prices and direct delivery are secured—this on fresh meat is fully 33 per cent., on vegetable produce 50 per cent., and on flour and cereals from 25 per cent.

2nd. All the perishable foods are in a better and fresher condition from prompt delivery and less handling, consequently more flavoursome and palatable.

3rd. The quantity of the ingredients to be dealt with permits the employment of mechanical appliances in their manipulation, by which not only are they more cleanly and quickly dealt with, but the savings effected in material and costs will in the aggregate reach 20 per cent.

4th. The simple methods by which the meals may be prepared, afford an opportunity for utilizing the services of the school pupils of the district, with the twofold advantage of furnishing them with remunerative employment, and at the same time imparting a sound practical knowledge of useful cookery. The meals supplied by the course of procedure referred to would not consist of cuts from sirloins, rumps of beef, or legs of mutton ; but they would be none the less valuable or acceptable on that account, inasmuch as these are joints that rarely come within reach of the working classes, many of whom scarcely, if ever, taste any meats at all, let alone the prime joints,—bearing in mind that all parts of an animal are equally nutritious, and the different portions are most palatable when prepared in the manner their constituents are best adapted for, this does not affect the result.

The preparation of foods for consumption embraces the whole art of Cookery—but it forms no part of my task to enter into regions that have been so effectively dealt with by Careme, Ude, Francatelli, Soyer, and hundreds of other experienced and practical writers on the subject, neither do I propose to quote the thousands of recipes suitable to every possible subject to be found in the pages of the culinary encyclo-

pedias of Beeton and Cassell. Instead of the technical, I prefer dealing with the commercial preparation of foods, in order that they may yield the greatest results from an economical point of view, consistent with the supply of substantial and savoury meals to the working classes while engaged at their daily labour, at a cost within the reach of those whose wages do not permit of a sufficient expenditure to allow for the purchase of the necessary nourishment the system requires.

Frequent reference has been made to the want of knowledge of cookery on the part of working-men's wives, but due allowance has not been given to their inability to provide themselves with the requisite cooking utensils in which to prepare their foods ; the spices, condiments, and vegetables, to add to them in order to complete their appetizing character ; the fuel to cook them with, or the time necessary to attend to them ; with these different resources at her command, the average British work-woman would by practice produce many an economical and savoury dish for her husband and family, that she is at present unable to provide, but which the women on the continent can readily furnish.

But the isolated preparation of meals is by

no means an economical course to pursue, foods should be prepared in bulk, as great savings may be effected both in material and cost by the concentration of the work in a central establishment of a district, where all the necessary food material for the day could be collected, properly examined as to its quality and condition, and dealt with by labour-saving machinery, which not only save time, but give greater results ; in the adoption of this course, the larger the quantity of material prepared, the smaller will be the proportionate cost per meal.

Simplicity of procedure will yield the most marked economical advantages, and for the attainment of success in this direction, wherever the materials are prepared they should be confined to the one description of meal for that day. It may and possibly will be thought impossible for the people of a whole district to have the same taste at the same time, but the primary object of any movement in this direction is to supply a much larger quantity of food than work-people now receive, in a better condition, at a much less cost. This great object can only be obtained by the strict observance of those regulations that conduce to its attainment, and the principal one must be simplicity of procedure. It need not be thought that the system

will be confined to only one kind of meal, that is certainly not the case, for although the basis of the meals is limited to the two kinds of meat, beef and mutton, the available field of selection, from the cereal and vegetable world, together with the great variety of spices and condiments, render it possible to produce an endless variety of dishes, suitable for work-people's meals, which require to be of a substantial character.

No difficulty exists to so arranging a bill of fare, that the dinner for every day for one or two months should be quite different, and the management of any organized movement in this direction will find that by confining themselves to one character of meal for each day they will succeed, but so soon as they attempt the second they are sure to come to grief; sooner than risk the chance of failure, it is far better to allow those who are not satisfied with the meal provided for the day to supply themselves from another source.

Having determined upon the meal for the day, and the number to whom they are to be supplied, the gross quantity of each class of food product should be ascertained and procured, and the particular quantity of each ingredient for a single meal arrived at and fixed. The meats should be chopped—the

vegetables washed by machinery and picked, the cereals weighed, and, where necessary, made into doughs. All being in readiness, cooking utensils or saucepans with bow handles should be provided of different sizes in accordance with the number of meals that they are to contain.

The meat and other ingredients should be placed into each cooking-vessel separately, and the requisite spices and condiments added, so that they may be ready to be forwarded to their destination, and, when there, that they will need but the addition of a defined quantity of water to be ready for being cooked.

The dishes that may be prepared in this way include beef *à la mode*, minced-beef, minced collops, hashed beef and mutton, stewed beef and mutton, beef and mutton dumplings and puddings, curried beef and mutton, haricot mutton, Irish stew, Scotch broth, rissoles, croquets, and other dishes of a similar character, which may be prepared in endless variety; each of the dishes will absorb a quantity of vegetable, such as potatoes, carrots, onions, turnips, &c., or cereal as flour, barley, rice, sago, macaroni, &c., with the addition of herbs, spices, and condiments for flavouring, the quantity of which should be determined by an expert cook in accordance with the nature of the meat and meal,

but it must always be borne in mind that with minced meat the portions of fat which are incorporated with it, is more freely separated; therefore a larger quantity of vegetable may be used with advantage, as they will absorb the fat, and render it palatable, while the larger the quantity of vegetable that can be properly introduced and thus made savoury, the more economical the meal will be compared to its extent.

The field for the exercise of skill and experience in this direction on the part of the cook is a very wide one indeed.



CHAPTER LXVIII.

COOKING OF MEALS.

IT will be understood that the savings that may be effected are very great indeed, while the advantage of providing the children with a change of diet is equally important.

By the phrase "Cooking of Meals," I am desirous of concentrating attention upon an unpractised branch of the culinary art from which great advantages may be derived when it comes to be understood and practised, as by its means a substantial and palatable meal at a nominal cost may be readily brought within reach of the industrial classes of every condition and under varied circumstances.

The principle consists in preparing all the ingredients that the meal should consist of at a central kitchen, and placing the requisite quantities of each for a meal in a saucepan or other vessel, so that it may be disposed of in that form at a given price, which should include the

use of the vessel for cooking the meal in ; by this means the varied small quantities of herbs, spices, and condiments that have but little value in themselves when purchased in bulk, yet go a great way to give flavour and taste to foods that are otherwise insipid and flavourless—can be made available, and thereby make the foods palatable and enjoyable.

The knowledge of the requisite quantity of each ingredient to produce an average result satisfactory to general taste could be speedily acquired, so that those who engage to partake of the meals need be under no alarm that they will have too much of any one thing—the most suitable vessel in which the meals can be cooked are the simple cans that working-men have used from time immemorial to take their tea to their work.

These vessels are not only thoroughly understood by the working classes, but are exceedingly cheap, their prices being from 4*d.* to 6*d.* each ; they hold one quart or three pints. Another vessel equally useful and cheap is one the shape of the body of an ordinary saucepan, with a wire bow handle instead of the straight handle. This article, well known as the inseparable companion of the Australian digger, is equally cheap and useful. These vessels are

useful for all purposes where the contents have to be boiled or stewed, but where the meals are intended to be baked, then an ordinary square baking tin should be used.

To stew or boil the meals the vessel should be stood in a "water-bath," which may be heated by gas, petroleum, oil, or any other means that presents itself according to its size. The water-bath is one of the oldest, most efficient, and yet most economical forms of cooking utensils that we have. It is to be found in all well-ordered kitchens, where it is known as a "Bain-Marie," and is invariably made of copper. Its simple description is a small tank to contain water, with a number of saucepans to stand in it. When in use it is placed on the side of the stove, the little saucepans with their contents are placed in the water, the heat of which cannot reach above boiling-point, consequently their contents gently simmer and cannot burn, the water-bath on a larger scale in conjunction with the tin vessels, presents itself as the most effective means for the cooking of the meals; it can be regulated in size to any requirements, 50 or 500 meals may be cooked at the same time, and the time required for cooking ascertained, and regulated to a nicety. Ample time may be allowed for cooking, and the meals can always be kept

hot without detriment to the material or fear of their being overcooked; their number may be multiplied, and connected together they may be worked in unison, and one or two gas jets is all that is required for them.

If on the other hand the dishes or meals are intended to be baked, they can be placed in an ordinary-sized gas oven. These would require a small amount of attention to see that the meals did not burn. Gas ovens, with burners to heat a water-bath on top, are now in common use; by this system of cooking by water-bath, the greatest result is obtained at the most nominal cost.

An improved system of meal distribution could readily be provided for the employés of industrial establishments where facilities for cooking and dining existed, each meal to consist of at least two pounds of solid food, viz. half pound of English meat, half pound of flour or other cereal, and one pound of vegetables, with the necessary spices and condiments, which would furnish a soup, baked or boiled dish, vegetables, pudding, and bread. The cost of each meal would not exceed sixpence, including the provision of cooking apparatus, utensils, table-linen, crockery, cutlery, glass ware, together with cooks and attendants.

The variety of the dishes that could be provided at this nominal cost, may be seen from the details of the meals for four weeks, the days of supply being from Monday until Friday inclusive :—

FIRST WEEK.

—	SOUPS.	JOINTS OR ENTRÉES.	VEGETABLES.	PUDDING.
Monday . .	Pea	Meat Pie	Potatoes	Arrowroot
Tuesday . .	Mulligatawny	Curried Mutton	Rice	Suet Dumplings
Wednesday .	Haricot	Beef à la mode	Haricot Beans	Fig
Thursday . .	Lentil	Minced Beef	Potatoes	Corn Flour
Friday . .	Vegetable	Mutton Pies	Potatoes	Jam

SECOND WEEK.

Monday . .	Scotch Broth	Stewed Mutton	Rice	Plum
Tuesday . .	Sago	Minced Collops	Potatoes and Onions	Dumplings
Wednesday .	Rice	Beef Puddings	Potatoes	Farina
Thursday . .	Macaroni	Stewed Beef	Rice	Rice
Friday . .	Turnip	Seasoned Hearts	Potatoes	Tapioca

THIRD WEEK.

Monday . .	Potato	Boiled Beef	Potatoes	Suet Dumplings
Tuesday . .	Cabbage	Curried Beef	Rice	Koley-Poley
Wednesday .	Haricot	Irish Stew	Potatoes and Onions	Hominy
Thursday . .	Onion	Stewed Tripe	Rice	Sago
Friday . .	Tapioca	Mutton Pies	Rice	Treacle

FOURTH WEEK.

Monday . .	Vegetable	Haricot Mutton	Potatoes	Currant
Tuesday . .	Barley	Mutton Pudding	Haricot Beans	Plum
Wednesday .	Carrot	Roast Beef	Potatoes	Yorkshire
Thursday . .	Ox Cheek	Hashed Beef	Rice and Onions	Semolina
Friday . .	Spring	Stewed Mutton	Potatoes	Macaroni



CHAPTER LIX.

DISTRIBUTION OF FOODS.

IT will be borne in mind that in the previous chapter, I have dealt with the abundant supply of home-grown foods we possessed, and extravagantly wasted. How, by the exercise of forethought they might, at the same time, be made to yield a higher price for the producer, while being sold at a lower rate to the consumer. I further pointed out how, by means of the systematic collection and preparation of the food material for consumption, economic results of a marked character might be effectively secured; these advantages would, however, be next to useless, unless the foods could be readily brought within reach of the people, when and where required, in a simple and effective manner.

Distribution is, therefore, a most important feature in connection with the matter, inasmuch as it forms the connecting-link between the producers and the consumers, and the more it

can be simplified, the greater will be the benefits that must accrue to both.

I propose to confine my observations to the distribution of meat, that being the most expensive, and at the same time the most difficult subject to deal with. Whatever is done in connection with that commodity, may also be done in connection with any other article of food produce.

Distribution of meat should be considered under two heads, that of production, and that of consumption.

The distribution of production relates to the collection of live stock, their conversion into meat, the division of the carcasses into joints, and delivery to the retailer for sale to the consumer.

The distribution of consumption relates to the collection of meat and its preparation for consumption, so as to obtain the greatest possible nutritive result at the least cost.

The solution of the problem will be found in a definite expression of consent upon the part of a given number of consumers, that they are not only ready and willing, but that they definitely undertake to purchase and pay for a given quantity of produce deliverable at prescribed times over a given period.

All things must have a beginning, and the commencing point in any movement for simpli-

fyng the systems of distribution rests with the buyers. With their declaration of assent to purchase, the basis upon which transactions can be arranged and carried out is completed.

Taking meat as an illustration. If the employés of a factory each undertake to purchase on the average eight pounds of meat per week, it represents a quantity equal to a prime 100-stone beast for every 100 men. With this, farmers would be encouraged to arrange for the slaughter of the animal, and its being cut up as ordered, and packed in special baskets for direct delivery. The description and weight for each individual buyer is a detail that can be as readily met in the farmer's slaughter-house in the country, as in the shops of the London butcher.

The multiplication of men and establishments, leads to the increase in the number of animals necessary to be dealt with, which, with adequate demand, might soon reach a quantity sufficient to warrant the maintenance of a continuous supply.

Farmers cannot well commence the slaughter of their animals and direct delivery of the meat, unless they can be assured of a sale for the whole carcase, as they run the risk of a loss by any portion that remains unsold.

On the other hand, farmers, by combining to slaughter, would find numerous organizations in

existence, to whom they could apply, whose constituents would readily purchase their meat, if the facilities for their doing so were created.

It is thus by mutual efforts on the part of those interested in production and consumption, that the system of distribution in meat can be brought about, and, relatively, what can be effected with meat, can also be carried out with all other food products, whether perishable or not.

The facilities for slaughter that are in existence, and available for the farmers of the Northern and other counties, having been named, it only remains for me to point out the direction in which the various outlets for meats may be made, and combinations of consumers readily organized, in order to complete the information necessary to enable steps to be taken to bring effective distribution into active operation.

In addition to the employés of factories who may combine to purchase their meats of any body of farmers who undertake to supply it, the following channels are also available :—

1st. The 1400 industrial co-operative societies throughout the country, numbering about one million members, whose annual purchases reach 34,000,000/., three-fourths of which is for pro-

visions other than meat. Most of these societies have tried meat, but could not profitably carry on its sale, owing to their being compelled to have parts of the carcasses that their members did not require. These societies would welcome and readily support any system that would enable them to supply their members with meat at a reasonable price,—

2nd. The Civil Service and similar stores in London, and some of the large country towns.

3rd. The large private trading establishments in various parts of London who compete with the stores.

4th. The Government departments and public institutions, who make regular contracts for a given term would, without doubt, encourage direct trade with farmers.

5th. The store departments of the Army and Navy, who are large consumers by contract, and badly supplied at present.

The directions named, will, in the aggregate, include a considerable portion of the consumers of the country, and the conclusion of arrangement with them would pave the way for business, relations being entered into between the farmers and the retail butcher, whose correct position in the community does not appear to be generally understood. It should therefore be borne in

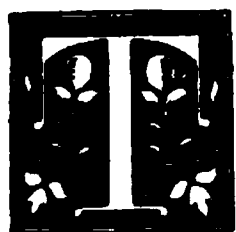
mind, that the retail butcher renders society an indispensable mechanical service, for which he is entitled to be paid. The difficulty that has grown into existence does not arise with the retail butcher, but is, to a considerable extent, the outcome of the altered condition of things that has been gradually taking place.

The requirements of the various parties named, would be principally for the boiling and second-class roasting joints. This would leave the sirloin and rumps with the farmers for special sale to the retail and family butchers, who would be found to readily buy all that could be offered for sale.

It will thus be seen that the organizations by which direct trading with farmers may be initiated and carried on, could be speedily brought into communication with them, and a definite outlet made for a considerable quantity of meat without the intervention of middlemen, by this means the distribution of meat between producers and consumers be effectively brought into operation and placed upon a permanently sound basis.

CHAPTER LXX.

THE DISTRIBUTION OF MEALS.



THE advantages in connection with the preparation and cooking of the meals, that have been dealt with, will be fully recognized ; but their utility would be materially reduced if the meals could not be brought within the reach of those for whom they are intended, as and when required, at a comparatively small cost ; the subject of the distribution of meals, therefore, presents itself as one of the utmost importance.

It is a remarkable feature in the proposed system of food supply that the details of preparation and cooking lend themselves to an effective and ready means of delivery, that promises to meet the conditions and requirements of the industrial classes in every direction. Wide and varied as those conditions and requirements may happen to be, there are none within reason that cannot be adequately met and provided for—whether it be the skilled artisan or the unskilled labourer, the employés

of an extensive establishment or the craftsman who works in his own rooms, the out-door hands at the docks and wharves in the East, or those engaged in the erection of buildings at the West, the match-girls of Bow and the machine-girls of the City, the pupils of our schools or the patients of hospitals, the not overpaid clerks of City establishments, and the underpaid subordinates of our official staffs; even families resident at industrial dwellings or privately in densely crowded neighbourhoods, may all be brought within reach of a system that will promptly and effectively supply them with substantial and palatable meals, well cooked, at a nominal cost compared to their nutritive value. The meals supplied in every direction would be of the same class and character with the one universal recommendation for their introduction, that they have been prepared from the freshest and best material obtainable, which has been dealt with upon a common-sense basis, having for its object the utilization of every portion that was good, and avoiding every particle of waste, while handled with scrupulous cleanliness and care, and the unnecessary expenditure of a single farthing in the collection, preparation, and distribution of the foods prevented,—are facts sufficient in themselves to whet the

appetites and encourage digestion in all right-minded members of the community, irrespective of their personal position.

The charm in the system is one that will be recognized in many quarters, and remains in the fact that all customers are treated alike, irrespective of their position or means.

Economical and effective distribution simply depends upon organization; the greater the number to be provided for, the better the work can be performed. Neither is it a matter involving large considerations and unwieldy machinery in its execution, for every transaction in connection with food distribution, even to the provision of a penny dinner to a ragged-school pupil, is a separately performed operation; but it is to the numbers and systematic regularity with which the requirements of the people can be known in advance, so that arrangements can be made for their orderly supply and prompt delivery that success will be due, for then it will be found that the larger the number, the more is the cost of distribution of individual meals reduced, until it reaches a minimum.

The course of procedure may be described in a very few words, and consists in the provision of a water-bath or Bain-Marie, that can be

readily heated at the place where the meals are to be consumed. Water-baths are capable of being made in every variety of shape and form ; but a square-shaped tank is the most advantageous form to simplify deliveries to employés in large establishments, where a number of meals have to be promptly distributed to separate parties, so that each person may have the meal specially prepared for them. Each bath should be three feet by three feet ; it would then have the capacity of containing 100 meals, in rows of tens—a meal consisting of two pounds of solid food, requires a vessel of three pints—the number of the rows and of the meals being marked on the sides, so that the numerical position of every meal may be readily seen and removed.

From the size and shape named, the cooking apparatus may dwindle down in form and variety to a couple of tin saucepans of different sizes, so that one may have to be partially filled with water, and the other, containing the meal, being inserted in it. This apparatus may be heated, if necessary, by an ordinary petroleum lamp-burner. Numerous cooking-vessels are in use where hot water is the medium for conveying heat to foods for the purpose of cooking them ; they all effectually serve the

intended purpose, the degree of temperature to which they are limited being best adapted for the cooking of foods.

Where it is intended to have baked as well as stewed or boiled meals, a gas oven and square dishes of conical make can be used. Each meal will occupy a dish of a requisite size, these will be placed on a tray, so that each shelf in the oven will hold fifty meals. An oven will have four shelves, which will carry 200 meals; in all, the cost of gas for cooking 200 meals will be about sixpence.

It will thus be seen that, in the preparation of foods for consumption, ample scope can be found for the exercise of forethought, and that any attention devoted to the subject in that direction will be fully and amply repaid, the essential points for consideration being the definite subdivision of the different operations incidental to the collection, preparation, cooking, and distribution of the foods, under separate managements, each of whom should attend to and have control of their own immediate department, and improve it as much as possible without interfering with the other.

The force of this position will be well understood by persons having experience in management, who well know that those having the practi-

cal experience essential to purchase commodities with advantage, and therefore prove first-class buyers, would be utterly useless as cooks, and know little or nothing as to the most judicious flavours that given quantities of different articles would produce with the aid of condiments and spices, and neither party could effect arrangements for the prompt delivery and collection of the meals and utensils—a detail that only those having considerable experience in the conduct of intricate traffic operations could carry out with the necessary punctuality essential to the success of a movement in any district.

It will be seen that the system suggested may be brought into operation in all directions where they are desired, and will result in placing meals of a greatly improved character to those at present obtainable at the disposal of all classes at a largely reduced cost. The system commends itself to special attention by the extreme simplicity of its nature and the readiness by which it can be made available for the school, public workshops, or private homes, with equal economical results. Its essential features are :—

1st. The purchase of foods in quantity at wholesale prices.

2nd. Their preparation for consumption in bulk.

3rd. Their distribution in detail when dressed, ready for cooking in the utensils in which they are to be cooked.

4th. The use of digesters, water-baths, and gas ovens, instead of ordinary saucepans and open grates, by which the foods are more thoroughly cooked and their flavour retained, the cost of fuel reduced to a minimum, little attention required, and the foods may remain until wanted without risk of being overdone or burnt.

By the means thus set out, all the cost of preparing the foods for consumption, including their delivery in reasonable quantities within moderate distances, would not exceed one half-penny per meal.

The extent of the meals is based upon a sufficiency of food for a working man engaged in his occupation, and consists of two pounds of solid food for each—viz. half a pound of meat, one pound and a quarter of vegetables, and a quarter of a pound of flour or other cereal, with the necessary spices and condiments; the cost of material, preparation, delivery, cooking, inclusive of a reasonable commercial profit, is estimated at fourpence. The meals may be pre-

pared in every variety of dish that is generally known by working men's wives, and in a considerable number of ways that are not known to them, or if known, are not utilized.

The meals may be provided wherever a sufficient number of persons intimate their desire to take them, or persons may arrange with each other to provide the material, and prepare the meals for themselves with but little extra cost :—

1st. At schools for children.

2nd. At factories where the employers will set aside space for the employés to dine in and allow of their doing so.

3rd. At factories where women work at sewing machines or other occupations that enable them to be seated, where an independent dining-room is not absolutely necessary, although desirable.

4th. For workmen engaged in building or other outdoor labour, the meals may be as readily provided and partaken of as those they are now content with, but would be of a much more substantial and palatable character.

5th. The meals are also available for private families living at industrial dwellings, one room on the ground floor of which would supply all the accommodation requisite for the cooking appliances, which could be attended to by one

of the women resident in the building, and the whole of the residents supplied with the meals.

6th. The meals may also be brought within reach of private families, in any and every district, by means of the ordinary baker of the district ; bearing in mind that there are about 3000 bakers in London, whose ovens are unused during the day, and who have shop attendants only partially employed from breakfast until tea-time, it will be seen that in this direction alone the opportunity presents itself for advantageously and profitably utilizing an enormous aggregate amount of appliances and labour that at present are dormant, and it only needs the definite request of the residents of a district to be supplied with an abundance of the best of foods at the lowest minimum cost for their wishes to be promptly and expeditiously complied with.



CHAPTER LXXI.

FARMERS' COMBINATIONS.

TO meet the present position and bring about a solid improvement, it is necessary that farmers on their side should combine to provide a regular supply of what is required. This they may readily and advantageously do.

Taking the article meat, which is apparently the most difficult, but is in reality the easiest commodity to deal with, it may be readily seen that if the farmers of any one county will establish their own slaughter-house, and arrange among themselves for the provision of a regular supply of cattle and sheep for slaughter and sale as dead meat, they will have done a great deal towards improving their condition and bringing the buyers to them; and if the buyers do not come, they are not in any worse position than at present, for they may continue to send their dead meat to market just as they do now.

They, however, will have the advantage in any event, of being paid for the full weight of the

meat yielded by their animals on the farm, and they will also have the full value of the offal as realized in its best form.

Their meat will not only be more in quantity, from the animals not having travelled, but better in quality, from their not having been worried and fevered. Under these circumstances it is not possible to suppose that if the trade and the public know that the meat is for sale, they will not arrange to buy it, for direct delivery from the place of slaughter.

The farmer's further improved position in this case will be that he can supply buyers anywhere with what they require when they require it; as wherever the sales may be made, the deliveries will be given from the slaughterhouse, where the meat rests and ripens in cool chambers until wanted, thereby continuously improving in condition.

If buyers in the early part of the week require a larger proportion of boiling joints, they can be disposed of, and if towards the end of the week they require roasting joints, they can be accommodated. If the trade in a particular district requires special parts of the carcass, they can be supplied, and the most important fact that particular trades can procure the actual portion of the carcasses that they require, and no more, is

sufficient in itself, when known, to draw them to the district.

The supply in this form will create the demand, and, moreover, higher relative prices will be paid for each particular portion, so that on the whole a better average will be made than if buyers have, as now, to take the portions of the carcase that they do not want.

An additional advantage to the farmer will spring out of the movement in this direction by the facilities it will offer for home-grown meat to be sold as such on its merits, and it may be safely assumed that the public will pay a penny a pound more for English meat even of second quality if they can be assured that it is really home-grown; whereas at present all home-grown meat that is not really of the highest class in the wholesale market enters into competition with imported beef, or the meat from imported cattle, and does not realize more than it, bearing in mind that the proportion of really prime meat is not large according to the total quantity, the establishment of better values for that which is not the very primest, is an important feature for the grazing interests.

With these advantages of higher prices in front of them, the farmers, by this combination for slaughter and supply close to their farms,

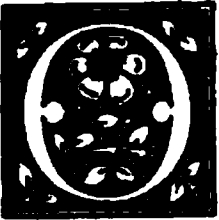
avoid so many expenses that they can if necessary sell their meat at a lower price than they do now, and still obtain better profits, while consumers can pay farmers more than they now receive, and yet obtain really good English meat at a less price than they now pay for imported or inferior.

This, then, presents itself as a truly social problem of the highest order, in which all classes are largely interested and may advantageously unite in carrying out.

The means by which these arrangements can be initiated and carried through would best be done by a combined organization on both sides ; the farmers on their side combining to supply and sell, the consumers on their side combining to purchase, the prices from time to time being jointly arranged by the representatives of both. But it should be borne in mind, that so far as the working classes are concerned, they already possess the nucleus of the movement shadowed out in the large number of Co-operative Stores scattered throughout the country. These while able to provide their members successfully with almost everything, have not generally succeeded in bringing fresh meat within their reach, and would doubtless be pleased at the opportunity of doing so.

CHAPTER LXXII.

FARMER'S COMBINATIONS.

N all sides it is stated, that it is not possible to get farmers to agree, "they never have done it," and "therefore never will," are expressions of opinion that have been made to me by many who have a life-long experience of farmers and their ways.

But I am in no way influenced by such opinions, although they have been made by authorities whose position stands high in the Agricultural world. A farmer is just as human as any other member of the community, and quite as ready to adopt a course that will result in bringing him a better remuneration for his labours, as the member of any other class in the kingdom; but he has to be satisfied in the most thorough and undoubted manner before he will move in any new direction.

The course to adopt is to take steps to satisfy him, that combination not only leads to marked results of a beneficial character, but that it can

be promptly and inexpensively brought into operation in any and every direction ; and in contradistinction to my agricultural friends, who allege that farmers will not combine for the realization of their produce, I propose to utilize a few pages in showing them how simply they may do so, and cannot but think if the Government Departments identified with the agricultural interest, would authorize farmers being definitely approached, and the subject put clearly and explicitly to them, that they would speedily fall into the system and bring it into active operation. Those who think otherwise, would have held the same opinion some years since, in reference to industrial co-operation, and yet we find that in a few years the working men out of their weekly wages have accumulated a capital of about twelve million sterling, and that their annual purchases exceed thirty-four million pounds sterling. In previous pages, frequent reference has been made to the large benefits that would accrue to farmers by combination. Therefore it is only necessary to mention here, that by any attempt at its practice, farmers can in no way be in any worse situation than they are at present, while by its adoption they may occupy a considerably better position.

The great obstacle that has existed to prevent co-operation amongst farmers, will be found to be the general way in which it has been at all times referred to and misunderstood.

To require farmers to combine generally with the whole of their produce, is simply to surround the subject with difficulties and contingencies, the extent of which can hardly be seen, owing to the complications.

The proposals that have been made for the joint realization of live stock, cereal and green crops, dairy, orchard and farm produce in its infinite varieties, are sufficient in themselves to bring about failure whenever tried.

For the farmers of a whole county to form a society for the slaughter of their live stock, and to elect a committee who would arrange for its collection, conversion into meat, and the ultimate sale of the meat, is a very simple matter that could be readily brought into operation and carried out; but, if in addition the committee were required to deal with the potatoes growing in the same district, their labour would be multiplied in an extraordinary degree, and the whole character of the business arrangements changed.

Again, if the growers of a district combined for the joint realization of their potatoes, the

course of business details in connection with the subject, would be simple and clearly understood ; but by introducing the sale of poultry, even to a small extent, the details not only require changing, but a different class of experience is necessary to carry out transactions properly.

Combination with farmers must be confined to special classes of produce, each having its own society. A farmer may belong to several societies, and place his different articles with each ; but no society should go outside of the special purpose for which it was formed.

The course of procedure necessary for farmers to follow who wish to combine for any special purpose, is to register themselves under the Industrial and Provident Societies' Act, 1876. The process is a simple matter, and costs nothing.

Let it be assumed that seven or more farmers in a neighbourhood wish to establish a butter factory, for the purpose of utilizing the milk from their own cows. They should apply to the Registrar of Friendly Societies at London, Edinburgh, or Dublin, for a form of application, which will be sent to them, and also the details of twenty rules that must, in any event, be embodied in the rules of their proposed society.

They then draw up a set of rules for themselves, and sign them in duplicate, and also the application by at least seven persons and the secretary. The rules may be sent in manuscript or printed; if in order, they will be registered, if not in order, the matter requiring alteration will be most courteously pointed out, and upon the rules being transmitted in due form, they will be registered without the payment of any fees, either for the registration or advice as to alterations. Upon registration the society attains a corporate position similar in status to a limited company, with the reservation that no member can hold more than 200*l.* worth of shares.

The society under its seals can make contracts and engagements of every kind in connection with its business. None of the members are personally liable beyond the extent of the shares they have subscribed for.

The following are the rules of a society that can be made applicable to every branch of Agricultural industry, requiring only the alteration of the one rule, number 2, descriptive of the objects of the proposed society.

COPY OF RULES

For the formation and conduct of a Farmers' Co-operative Society in any district, for the purpose of selling Meat, Wheat, Flour, Milk, Butter, Cheese, Fruit, Market Garden or other Produce.

~~~~~

THE                      [*insert name*]  
SOCIETY, LIMITED.

## RULES.

### NAME.

1. The Society shall be called The  
[*insert name, which is not to be that of any existing registered Society.*]                      Society, Limited. Its  
registered office is in England, and is No.  
[*insert address.*]

### OBJECTS.

2. The objects of the Society are :—

[*If for Cattle and Meat, insert.*]

To carry on the Trades of Dealers, Agents, and

Salesmen of Live Stock and Farm Produce, Graziers, Butchers, and Meat Preservers.

*[If for Milk, Butter, or Cheese, insert.]*

To carry on the Trades of Butter and Cheese Makers and Dairymen, Dealers, Agents, and Salesmen of Milk, Butter, Cheese, Dairy, and Farm Produce.

*[If for Fruit-Growers, insert.]*

To carry on the Trades of Agents, Salesmen, Dealers, and Growers of Fruits, Flowers, Vegetables, and Farm Produce, Fruit Preservers, and Jam Makers.

*[If for Wheat and Cereals, insert.]*

To carry on the Trades of Dealers, Salesmen, Factors, and Agents for Farm, Dairy, Orchard, and Garden Produce.

#### ADMISSION OF MEMBERS.

3. The shares (which are transferable) shall be £1 per share payable in instalments of not less than 1s. per week per share.

4. Any society or company registered under an Act of Parliament, the liability upon whose shares is limited, may become a member of the Society on application to the committee of management and subject to their approval.

5. No member other than a registered society shall hold an interest exceeding £200 in the shares of the Society.



**MEETINGS.**

6. General meetings shall be held quarterly, on the \_\_\_\_\_ of \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_ in each year, the last mentioned to be the annual general meeting. Each member shall have one vote, and members not present at the meeting may vote by proxy.

7. Rules may be made, altered, or rescinded by the consent of two-thirds of the members of the Society present at any general meeting. No amendment of rules is valid until registered.

**MANAGEMENT.**

8. The management of the Society shall be vested in a committee of not more than nine members, elected at a general meeting, who shall determine their respective powers and remuneration for one year from the date of such general meeting, or for such period as the general meeting may determine.

9. The powers of the committee shall expire at each annual meeting, but members shall be eligible for re-election. Members of the committee may be removed from office by a vote of the majority of members present, either in person or by proxy, at a special or quarterly general meeting.

10. The first committee of management shall consist of the persons whose names are subscribed to these rules, and such other persons whom they may appoint, and they shall hold office until the first general meeting. They shall have full control over the Society's affairs and effects subject to the rules.

11. A President, Treasurer, and Secretary of the Society shall be appointed at the first committee meeting of the Society after the first general meeting of the Society.

12. These officers shall have an annual appointment, subject to removal by the committee, at any of its ordinary meetings by a majority of the votes of the members present.

13. Three months' notice is to be given to the secretary as to when his duties shall terminate.

#### BORROWING POWERS.

14. The committee of management may from time to time, for the purposes of the Society, obtain by way of loan from any person, society, or company, on security of bonds or agreements, under the seal of the Society, signed by two at least of the committee and countersigned by the Secretary, any sum or sums of money not exceeding two-thirds of the subscribed capital of the Society, at such rate of interest and subject to such terms of repayment as shall have been approved by the majority of the members present at a general meeting.

15. The committee of management may within the said limit receive deposits of not more than 5s. in any one payment, nor more than £20 from any one depositor, payable on not less than two clear days' notice, paying interest upon such deposit at the rate of 5 per cent. per annum.

#### TRANSFER OF SHARES.

16. A member may transfer all or any of his or

her shares. The instrument of transfer of any share shall be executed both by the transferrer and transferee, and the transferrer shall be deemed to be the holder of such share until the name of the transferee is entered in the register book in respect thereof. The transfer to be in the form following :—

(I) \_\_\_\_\_ of \_\_\_\_\_  
 in consideration of the sum of £ \_\_\_\_\_ paid to (me)  
 by \_\_\_\_\_ of \_\_\_\_\_, do  
 hereby transfer to the said \_\_\_\_\_  
 the shares (or share) No. \_\_\_\_\_ in the \_\_\_\_\_  
 \_\_\_\_\_ standing in (my) name in the  
 books of the said Society, to hold unto the said \_\_\_\_\_  
 \_\_\_\_\_ his executors, administrators,  
 and assigns (or their successors and assigns as the  
 case may be), subject to the several conditions on  
 which (I) the said \_\_\_\_\_ hold the  
 same at the time of the execution hereof. And (I) the  
 said \_\_\_\_\_ do hereby agree to take the said  
 shares (or share) subject to the same conditions.

As witness our hands and seals the \_\_\_\_\_ day of \_\_\_\_\_

\_\_\_\_\_, 18 \_\_\_\_  
 Signed, sealed, and delivered by }  
 the above-named }  
 in the presence of }

17. Upon presentation to the committee of management of a transfer duly executed, attested, and stamped, and upon payment of 2s. 6d. or such less sum as the committee may prescribe, the transferee shall, if approved of by the committee, be registered as a member.

18. The transfer books shall be closed during the

fourteen days immediately preceding the annual general meeting in each year.

19. The register of transfers and also of shareholders shall be kept by the Secretary under the control of the committee.

#### AUDIT OF ACCOUNTS.

20. The committee of management shall once at least in every year submit the accounts of the Society, together with a general statement of same and all necessary vouchers, up to the 31st December then last, for audit, either to one of the public auditors appointed under the Industrial and Provident Societies Act, 1876, or to two or more persons appointed as auditors by the members at the meeting next before each yearly meeting of the Society, and shall lay before every such meeting a balance-sheet (which either may or may not be identical with the annual return, but must not be in contradiction to the same), showing the receipts and expenditure, funds and effects of the Society, together with a statement of the affairs of the Society since the last ordinary meeting, and of their then condition.

21. Such auditors shall have access to all books and accounts of the Society, and shall examine every balance-sheet and annual return of the receipts and expenditure, funds, and effects of the Society, and shall verify the same with the accounts and vouchers relating thereto, and shall either sign the same as found by them to be correct, duly vouched, and in accordance with law, or shall

especially report to the meeting of the Society before which the same is laid in what respects they find it incorrect, unvouched, or not in accordance with law.

#### BALANCE-SHEET TO BE HUNG UP.

22. It shall be the duty of the committee of management to keep a copy of the last annual balance-sheet of the Society for the time being, together with the report of the auditors, if any, always hung up in a conspicuous place at the registered office of the Society.

#### ANNUAL RETURNS TO REGISTRAR.

23. Every year before the 1st of June the committee of management shall cause the Secretary to send to the Registrar the annual return in the form prescribed by the Chief Registrar of Friendly Societies required by the Industrial and Provident Societies Act, 1876, of the receipts and expenditure, funds, and effects of the Society, and of the number of members of the same up to the 31st December then last inclusively, as audited and laid before a general meeting, showing separately the expenditure in respect of the several objects of the Society, together with a copy of the auditors' report, if any.

24. It shall be the duty of the committee of management to provide the Secretary with a sufficient number of copies of the annual return for supplying gratuitously every person or member interested in the funds of the Society, on his application, with a copy of the last annual return of the Society for the

time being, and it shall be the duty of the Secretary to supply such gratuitous copies on application accordingly.

#### INSPECTION.

25. The books and accounts of the Society shall be open to the inspection of any member or person having an interest in the funds of the Society, at all reasonable times, at the registered office of the Society, or at any place where the same are kept, subject to such regulations as to time and manner of such inspection as may from time to time be made by the general meetings; and it shall be the duty of the Secretary to produce them (except that no such member or person, unless he be an officer of the Society or be specially authorized by a resolution of the Society to do so, shall have the right to inspect the loan or deposit account of any other member without the written consent of such member).

#### SETTLEMENT OF DISPUTES.

26. Disputes between the Society and any of its members or any person claiming through a member or under the rules shall be settled by the decision of two persons to be appointed by the annual general meeting every year for one year, but who shall be eligible for re-election, who shall be called "the arbitrators," and whose remuneration shall be fixed or agreed upon by the committee of management upon each dispute which they may be called upon to settle.

## NOMINATIONS.

27. No member may withdraw from the Society except by transfer of his or her shares.

28. The Secretary shall keep a book in which he shall register or record all nominations made by members of the Society of any person or persons not being officers or servants of the Society, unless any such officer or servant is the husband, wife, father, mother, child, brother, sister, nephew, or niece of the nominator, to whom such nominator's shares (the term shares including for the purposes of this rule loans and deposits) shall be transferred at his decease, provided that the amount credited to him in the books of the Society does not exceed £100.

29. The Secretary shall in like manner record or register all revocations or variations of such nominations by the nominator.

30. The nominator shall pay 3*d.* to the management fund for the recording or registering of every such nomination, revocation, or variation.

31. On receiving satisfactory proof of the death of a nominator, the committee shall, at their option either transfer the shares in manner directed in such nomination, or pay to any person entitled thereunder the full value of his interest, unless the shares to be transferred to any nominee would raise his interest in the Society to an amount exceeding £200, in which case they shall pay him the full value of such shares, not exceeding the sum aforesaid. An entry of such payment shall be made in the proper book, and thereupon the shares so paid

for shall be extinguished. If any member entitled to an interest in the Society not exceeding £100 dies intestate and without having made any nomination which remains unrevoked at his death, such interest shall be transferable or payable, without letters of administration, to or among the persons who appear to a majority of the committee, upon such evidence as they may deem satisfactory, to be entitled by law to receive the same, subject to the provision of the Provident Nominations and Small Intestacies Act, 1883.

32. If any member entitled to an interest in the Society not exceeding £100 dies leaving a will and without having made any nomination which remains unrevoked at his death, or if any member entitled to an interest in the Society exceeding £100 dies, such interest shall be transferable or payable only to his executors or administrators, subject as aforesaid.

33. If any member becomes bankrupt, his interest in the Society shall be transferable or payable to the trustee of his property.

#### MODE OF APPLICATION OF PROFITS.

34. The profits of the Society after the payment of 5 per cent. interest on shares, and all working expenses shall, at the expiration of each quarter, be apportioned as follows :—

Twenty-five per cent. to the reserve fund to meet unforeseen contingencies.

Fifty per cent. to the producers, to be divided *pro rata* according to the respective amounts of produce supplied by them.



Twenty-five per cent. to the Establishment, Management, and Development Fund.

#### SEAL.

35. The Society shall have its name engraved in legible characters on a seal with the device of [*insert description*].

36. The seal shall be in the custody of the Secretary, and shall be used only when and as directed by the committee of management, a minute of which resolution shall be duly recorded by the Secretary in a book specially provided for the purpose.

#### INVESTMENT OF CAPITAL.

37. The committee may, if they shall think fit, invest in any company established under the Companies Acts, or incorporated by Act of Parliament or by Charter, with limited liability, or in any society under the Industrial and Provident Societies Act, 1876, or under the Building Societies Acts, or in any railway company of Great Britain or Ireland, any part of the surplus funds of the Society at such rate of interest and upon such terms as to repayment or otherwise as may be agreed upon.

#### PUBLICATION OF NAME.

38. The name of the Society shall be kept, painted, and affixed on the outside of every office or place in which the business of the Society is carried on, in a conspicuous position in letters easily legible, and shall be engraven in legible characters on its seal, and shall be mentioned in legible characters in all

notices, advertisements, and other official publications of the Society, and in all bills of exchange, promissory notes, indorsements, cheques and orders for money and goods purporting to be signed by or on behalf of the Society, and in all bills of parcels, invoices, receipts, and letters of credit of the Society.

#### DISSOLUTION.

39. The Society may at any time be dissolved by the consent of three-fourths of the members testified by their signatures to some instrument of dissolution in the form provided by the Treasury regulations in that behalf.

#### PROVISION FOR INVESTIGATION.

40. It shall be the right of one-fifth of the total number of members, or if the number of members shall at any time amount to 1000, and shall not exceed 10,000, it shall be the right of 100 members, or if the number shall at any time exceed 10,000, it shall be the right of 500 members, by an application in writing to the Chief Registrar, signed by them in the forms respectively provided by the Treasury regulations in that behalf,—

(a) To apply for the appointment of one or more inspectors to examine into the affairs of the Society, and to report thereon ;

(b) To apply for the calling of a special meeting of the Society.

Either such application to be made upon such notice to the Society, and to be supported by such

evidence for the purpose of showing that the applicants have good reason for requiring such inspection to be made or meeting to be called, and that they are not actuated by malicious motives in their application, as the Chief Registrar shall direct.

#### SUPPLYING COPIES OF RULES.

41. It shall be the duty of the committee of management to provide the Secretary with a sufficient number of copies of the rules to enable him to deliver to any person on demand a copy of such rules, on payment of a sum not exceeding one shilling for non-members and sixpence for members, and of the Secretary to deliver such copies accordingly.

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#### NOTE.

*These Rules have been approved by the Registrar of Friendly Societies, with whom an original copy has been filed, marked "Tallerman's Model Rules," which should be referred to with all applications to register new Societies.*

## BOOK THE FOURTH.

### CHAPTER LXXIII.

#### THE IMPERIAL INSTITUTE AND HOME INDUSTRIES.

**I**T is curious to note, that while reference can be proudly made to the extraordinary development of most national industries, during the reign of her Most Gracious Majesty; that notwithstanding the marvellous improvement in transit facilities, the supplies of home-produced perishable foods have receded, and while yielding little or no profit to the producer, they have become largely increased in prices to the consumer.

At the same time, we have unnecessarily drifted into a system of purchasing from foreign sources that which we could readily supply ourselves with by our own industry, and to the marked advantage of our own people of all classes.

The industries incidental to the production of meat, butter, cheese, milk, poultry, eggs, fruit, vegetables, and fish are extensive in character, with an aggregate annual trade of such an

enormous amount that a moderate saving upon some of them reaches many millions sterling.

To effect this, saving is before all others the most important question that can occupy the minds of all classes, inasmuch as if we can by any means stimulate our own agriculturists into exertions, that will gradually place them in a position to successfully and profitably compete with similar industries of foreign countries, we shall acquire abundance of home-grown foods at low prices.

The benefits that would accrue to the bulk of the people from this, will be discerned in the fact, that while the estimated value of our annual crops of agricultural produce reach about 220,000,000*l.* sterling, every five per cent. that can be saved or made, results in the addition of eleven million pounds sterling to the yearly profits or income of our farmers, while of the sum paid them annually in wages (300,000,000*l.* sterling), the working classes expend about 75 per cent. in foods, which if cheap, they obtain a much larger amount of for their money, or they can reserve some of their wages for other comforts. To such a great extent is this fact realized by thoughtful minds, that the *Times* in an article on the subject some time since wrote,—

If we are soon to get cheap-beef and mutton, it must be by developing the dead-meat trade.

The problem is worth studying. An increase of a penny a pound in the price of meat costs the country, it is said, about 5,000,000*l.* a year ; and a fall of a penny or a half-penny a pound is tantamount to much increased health and comfort to millions.—*Times*, July 20th, 1880.

But this is by no means the only advantage to be gained by thoughtful attention, inasmuch as the whole amount paid for home-grown foods remains in the country for redistribution, the greater portion being expended in wages to the agricultural labourer, who in turn supplies himself with manufactures, which give employment to other members of the industrial artisan class.

Money expended in home-grown produce may be likened to the shuttle in the loom, that continually travels from one point to another, always adding something to the previous store ; while money expended in foreign produce simply leaves the country for the benefit of the people of other nations.

But the whole of our agricultural industries have become disorganized, and the conduct of them has drifted into an unsystematic and wasteful practice, owing to those by whom they are conducted having failed to keep pace with the scientific and social progress made in similar industries abroad, which has

enabled those engaged in them, to send their produce to our markets and successfully compete with British farmers on their own ground, notwithstanding that they are saddled with the many disadvantages incidental to long distances.

The means that enable them to do this are in all cases simple, and capable of ready application to British agricultural industries, so as to furnish results that cannot fail to yield increased supplies of home-produced foods for consumption, with enhanced profits to producers, advantages to consumers, and material addition to the national wealth.

The systematic collection of information on these subjects from abroad, and a diffusion of the knowledge thus gained for their practical application among those interested at home, may well be considered within the scope of the Imperial Institute of the United Kingdom, the Colonies, and India, and embodied in the programme of its operations "to advance the industrial and commercial prosperity of the Empire," and by doing so it will establish a claim to, and without doubt enlist the sympathies and support of the bulk of the agricultural and industrial classes of the country, who have thus far viewed with distrust the progress

made with a movement in which their personal benefit was not clear to them.

For it must be admitted that thus far the information published of the direction in which the services and operations of the Institute are intended to work, shows that everything that is likely to aid the development of our manufacturing industries, by bringing them the information that will enable them successfully to compete with cheap foreign labour has been thought of—but thus far there is an absence of any reference to our great national agricultural industry, or even an indication of the means by which it might be benefited by the operations of the Institute's organization.

The importance of information upon these points is evident from two facts—first, the utter want of knowledge that exists in the minds of all classes throughout the kingdom on the subject of our own food resources, which, if properly husbanded and brought within the reach of the people, would render them independent of supplies from abroad ; second, from the prevailing general, but most erroneous impression, that we must rely on foreigners for the means of our existence.

It is to be hoped that the Committee of the Imperial Institute, in whose charge H.R.H. the



Prince of Wales has unreservedly placed a most important mission, will give the full consideration it deserves to those that are, beyond doubt, the greatest and most important of all questions that affect the national welfare—viz. the profitable development of all the industries in connection with the production and supply of home-grown foods; the extent or value of the vast benefits that would accrue to the people by those products being brought prominently and practically under the direct notice of producers and consumers and the simple means by which all classes who are at the same time producers and consumers may be brought into direct communication with each other.

This may be taken to be quite within the sphere of the Institute's operations, so that the people might thus become possessed of some reliable and accurate knowledge of their own food resources, and the best means by which they may be utilized and made available for consumption.

The far-seeing and noble ideas of its Royal founder will thus be the means of placing our great national agricultural industries upon a permanently improved, sound, and substantial foundation, capable of at all times furnishing substantial profits, to those engaged in them,

and at the same time bringing about a large amount of increased useful occupation for our industrial classes. The Institute will then indeed become a prominent beacon, whose bright beams of light will be discerned in all parts of the United Kingdom, where darkness and despair now prevail, and it will, by completely indicating the progress of the Empire, become worthy of the object its founder hopes to secure for it.

Bearing in mind that the statute-book of the realm bears evidence of the continuous efforts that have been ineffectually made for centuries past to stop jobbery in the markets, to improve the means of communication between the producers and consumers, and to abolish the systems known in the Middle Ages as "re-grating" and "forestalling," but which at the present time are maintained by "middlemen," "syndicates," "trusts," and "trade rings;" and taking into consideration the fearful distress from which the agricultural interests have suffered during the greater part of the present century, together with the general depression in trade, there can be no doubt that if the Imperial Institute be made the means of conveying instruction and intelligence to the agricultural and industrial classes in a form that will enable them to improve their position, and

to carry on their operations with profit to themselves and advantage to the nation, it will accomplish an object that will, at all times, do more than any other one thing to bring the Jubilee of our Queen to the pleasant and affectionate remembrance of future ages.

The spread of information in the first instance by the Imperial Institute, and the subsequent recognition of its successful application and working, would prove to be a new departure in agricultural industry, and impart a stimulus to those engaged in it throughout the United Kingdom, the natural outcome of whose exertions would be an improvement in the modes of working and large additions to the yield of home-grown food supplies, more especially in the departments of meat and dairy produce, which are the most important.

Without doubt there exists a general impression in the minds of most classes throughout the kingdom that we are necessarily dependent upon foreign sources for our supply of food, and that if these were from any cause to fail, their foods would be subject to famine prices.

The careful inquirer into the subject of our own food supplies in all its bearings will in no way share in this feeling, but be almost inclined to wish that we could be rigidly deprived of

all foreign supplies for a time, in order that general attention might be forcibly directed to our perishable home-grown products and the means by which they might be more beneficially economized and made available for consumption.

Upon entering into the consideration of the necessity of our requirements of foods from abroad, it is essential to bear in mind to what a very small point it is necessary to concentrate attention, inasmuch as it will be freely admitted that Scotland, Ireland, and Wales at the present time are independent of foreign supplies; for they not only produce all they require, but largely supply the English markets.

There were times, and they not long since, when England also produced all the perishable foods it required, and imported none from abroad. Strange as it may appear, in those days prices were low; yet then the agriculturists, who are still by far the largest single class in the country, prospered, and they consider them the good old times.

It must be admitted that the growth of population has created a larger demand upon our food resources, but not greater than that with which improved methods of production can keep pace.

It is but about forty years since we commenced to import cattle and sheep from the European Continent, and little more than ten years since the first importations of cattle and meat reached us from America and Canada. Before they came, meat was plentiful and cheap. What, then, would have been our position had they not come?

Why, then, should we so largely import animal foods now, and send twenty-four million pounds sterling annually out of the kingdom for meat that we are capable of producing in it?

That the agricultural interest is in a most depressed state, and all classes in connection with it are suffering severely, is beyond question; that the industrial classes have also suffered from a trade depression of a most severe character, and unable to find regular employment, is also a painful fact that has impressed itself on their minds: in neither case could matters have possibly been worse.

The difficulties that surround the home agricultural interests are in a great measure owing to the comparatively small and isolated character of the transactions of those connected with them, which precludes the employment of concerted measures in the distribution and realization of produce which would result in the

saving of material and expenditure or the conduct of operations upon a large scale from which many advantages would be derived, while the peculiar opinions farmers have of the value of their own knowledge and experience, operates as a bar to the conjoint working of the farmers of any district for the utilization of the systems that enable the large herds, flocks, and dairy produce of America and Canada to be profitably brought into competition with them, and deprives them of the advantages they possess of having consumers at their doors, and thus being able, if they deem it advisable, regularly to supply their requirements, without the contingencies and effects of falling markets.

In previous portions of this work, I have pointed out the details of each branch of the subject, and shown that the unfavourable circumstances that exist have arisen principally from four causes :—

First, the reckless, negligent, and wasteful manner in which our farmers and producers at present conduct their business.

Second, the greater facilities that foreign producers have to reach the markets in our large centres of consumption than our own farmers.

Third, the recent creation of the great mono-

poly in the London market, which virtually prohibits direct dealing between actual producers and consumers, and maintains a powerful body of superfluous middlemen, who unnecessarily interpose between the farmer and the butcher, and control prices.

Fourth, the advantage taken abroad of the discovery of means by which perishable foods can be safely transported over any distance, however remote, and the facilities those means offer for the conduct of operations upon a large scale, by which many savings are effected and much valuable food material profitably utilized.

I have also pointed out the various means by which the existing inherent difficulties that have become identified with every branch of our system of food production, preparation, and distribution, might be approached and overcome.

It will be seen from them that whether dealt with in detail, or as a whole, the subjects are traceable to one cause, viz. a want of cohesion on the part of our farmers. This is a natural defect that can only be encountered and successfully remedied by the spread of information and the concentration of such influential, and at the same time disinterested assistance that the Imperial Institute is in a position to bring to

bear upon the subject in each and all of the numerous forms that are identified with it.

The Royal Agricultural Society of England has adopted as its motto, "Practice with Science." It might, with advantage, add "and common-sense," inasmuch as the bulk of the farmers of the country appear to be so wrapt up in their own conceit and vanity as to be utterly unable to realize that some useful information and experience is to be gathered outside the fences of their own farms, and to bring a common-sense view impartially to bear upon any one business in which they are engaged. Neither will they be in a mood to do so until the ludicrous position they occupy is made clear to them, and a powerful effort is made to bring under their notice the superior methods practised in all directions abroad, and which they might advantageously adopt.

A movement in this direction might be readily and generally brought about if the Imperial Institute would offer special inducements to those who individually or collectively achieve the most practical results in the directions that have been indicated.

Such a course would tend to the direct concentration of thought upon the subject, and if that



were accomplished, it would lead to the inquiry and consideration of the different means by which the farmers in all parts abroad carried on their operations, and might subsequently end in the adoption and practice of much that is good and useful in the various branches of agriculture.

The Royal Agricultural and Horticultural Societies, and the numerous County and District organizations; might also aid in this direction; but, above all, the State might aid and encourage the teaching and practice of a system of combination amongst farmers; by conditionally remitting for a time a certain amount of taxation from those districts that most successfully introduced beneficial methods of working by concerted action. By thus bringing its influence and experience to bear on the subject, the Imperial Institute can approach the agricultural classes, and command from them an amount of attention that will in itself go far towards the attainment of a marked success.

The opportunity further presents itself for the Imperial Institute to accomplish the great work of bringing about a harmonious union of thought between the agricultural and industrial classes, that would lead to the suppression of agricultural distress and the establishment of industrial pro-

sperity which would prove to be the natural outcome of the formation of the general opinion in the minds of the agricultural and industrial classes that their interests were mutual and identified with each other. Without doubt there exists a general feeling of distrust between the two classes, which would be promptly eradicated if the farmers put themselves into a position to supply the food requirements of the people at reasonable prices. This they might readily do by taking advantage of and utilizing the natural advantages they possess (which they cannot be deprived of) in conjunction with the large organizations of the industrial classes that have been formed in all parts of the country.

The absolute necessity for steps to be taken in this direction are furnished from two remarkable sources that furnish material for deep reflection :—

First. Looking into our meat imports from abroad, we find that for 1887 they consisted of,

|          |     |     |     |     |     |     |     | Tons.  |
|----------|-----|-----|-----|-----|-----|-----|-----|--------|
| Beef     | ... | ... | ... | ... | ... | ... | ... | 32,809 |
| Mutton   | ... | ... | ... | ... | ... | ... | ... | 39,155 |
| Pork     | ... | ... | ... | ... | ... | ... | ... | 7,568  |
| Sundries | ... | ... | ... | ... | ... | ... | ... | 2,184  |

---

Total imports ... .. 81,716

or a total of 81,716 tons of fresh beef, mutton, and pork. On the other hand, upon examination, it will be found that the unnecessary waste of home-grown meat in the same year was as follows:—

|                                                                | Tons.  |
|----------------------------------------------------------------|--------|
| Shrinkage of Irish cattle in transit ...                       | 24,446 |
| Ditto English do. ...                                          | 23,500 |
| Loss of weight by preventable disease ...                      | 20,000 |
| Bones and fat used in manufacture in-<br>stead of foods ... .. | 14,000 |
| Total ... ..                                                   | 81,946 |

showing that the quantity of meat wasted during the year equalled the amount imported.

Second. The details of the yields of home-grown live-stock, cereal, and green crop produce taken in bygone years, and compared with those of the present time, unmistakably show that we are drifting to the bad. Taking an average for one year from a summary of the returns for the five years, 1871 to 1875, together with the agricultural returns for the years 1880 and 1888, it appears that the results shown are respectively as follows:—

| —              | 1871 to 1875.<br>Annual Averages. | 1880.      | 1888.      |
|----------------|-----------------------------------|------------|------------|
|                | Acres.                            | Acres.     | Acres.     |
| Wheat .. ..    | 3,737,140                         | 3,065,895  | 2,668,226  |
| Green crops .. | 5,073,843                         | 4,746,293  | 4,729,191  |
|                | No.                               | No.        | No.        |
| Cattle .. ..   | 9,932,443                         | 9,871,153  | 10,268,600 |
| Sheep .. ..    | 33,192,418                        | 30,239,620 | 28,938,716 |
| Pigs .. ..     | 3,782,134                         | 2,863,488  | 3,815,643  |

Looking at this subject from any point we may—and it will be seen that the course that has been pursued has resulted in a large and ever-increasing diminution of our own home produced bread and meat supplies, which have been replaced by importations from foreign countries, to whom considerable amounts of capital have been sent annually—the outcome of this suicidal course of procedure must inevitably be agricultural distress and trade depression, and these have occupied such strong positions with us, that they require to be effectively grappled with if they are to be dislodged. The time has arrived when thoughtful minds must see that we are drifting, and will ask themselves not only where we are drifting to, but is there any necessity to drift at all, for if in the five years, 1871 to 1875,

we could, on the average, cultivate 3,737,140 acres of wheat, 5,073,843 acres of green crop, and maintain 9,932,443 heads of cattle, and 33,192,418 sheep, why should we be content in 1888 with 2,668,226 acres of wheat, 4,729,191 acres of green crops, 10,268,600 head of cattle, and 28,938,716 sheep, being, in fact, a reduction of 1,068,914 acres of wheat, 344,652 acres of green crops, and 4,253,702 sheep, against which we have but an increase to show of 336,157 of oxen, cows and calves. The impression that continued to gain ground in the public mind, that the conversion of arable into pasture-land was a necessary order of things, and that while producing less wheat we were producing more meat, is thus shown to be an illusion of the gravest character, which it is of the utmost importance to dispel, as it is evident that we are largely deficient in our present home-grown supplies of both meat and wheat to what we were twenty years since. The remedy for this condition of things rests in the one isolated fact—make it profitable for farmers to produce bread and meat, and they will do so. All that it is necessary to do to effect this great object, is to establish a mutual feeling of confidence between the industrial and agricultural classes, so that it will be fully and clearly understood between

them, that all things being equal, the one will preferentially buy the produce and manufactures of the other. With this understanding fully impressed on their minds, the drifting will cease, and British industry, both agricultural and commercial, will be inspired with renewed energy and awaken to the true position it should hold in the commerce of the world. This is an age of education. Attention has been rightly and beneficially directed to the development of the minds of the young to fit them for their journey in life, for the advantages that have been thus gained to be retained, it is essential that the task should be carried a stage further, and the people taught the practical steps that are necessary to be followed, by which the greatest amount of nutritive foods can be obtained at the smallest cost—or purely and simply what to buy, where to buy, who to buy from, and what to do with foods after they are bought. In these matters well understood and practised, will be found much of the future welfare of the people.

The narrowest line possible now divides the bulk of producers and consumers; let the Imperial Institute take steps to sever that line, which it may promptly and effectively do, and it will achieve a task at the outset of its

career that will for all time place it in advance of every political and social institution of the empire, and earn for it the continuous gratitude of a people who will look back to the means that enabled the two great industrial classes of the kingdom to understand, appreciate, and act upon the true commercial principles that govern the individual interests of either to the mutual interests of both.

FINIS.

## A P P E N D I X.

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### EXISTING FACILITIES—PRACTICAL REMEDIES.

**H**AVING directed attention to several of the anomalous arrangements that exist in connection with our system of food distribution, which tend to reduce the amounts receivable by farmers in respect to their produce and materially to affect their welfare, inasmuch as every diminution thus brought about is a direct inroad into the profits of the agriculturist, those engaged in that industry cannot too earnestly consider the details of a subject that so largely affects their success.

The facts and figures convey many impressions of an astonishing character, and cannot be too widely disseminated. They dispel the illusion that as a nation we are driven to the foreigner for our supply of food, and will go far to impart to our working classes a practical knowledge of their participation in railway charges,



when, by bearing in mind the great interest that they have in an abundant supply of home-grown foods, it is a question for their serious consideration whether they should not strongly protest against the continuance of a system by which they so greatly suffer.

It is evident that a land which can yield such large supplies of food under the difficulties with which it has been enveloped, can readily be made to produce greatly increased quantities, with beneficial results, in which all interested might participate, whether landowner, producer, or consumer.

The subjects that force themselves on the minds of all classes by these extraordinary facts are,—

“Should we continue to expend 8,000,000*l.* sterling annually in the purchase of live and dead meat from abroad, while the rich grazing-lands of Ireland could be readily made to increase its exports to us by an equal quantity ?

“Should we continue to expend fourteen and a half millions sterling annually with foreign countries for butter and butterine, while we possess in Ireland the richest milk-yielding district in the world, with an abundance of available labour that could be profitably employed in its production ?”

The abundant supply of foods at a low price is, with one exception, the most important subject of consideration to the working classes, who expend about 75 per cent. of their earnings, estimated at 300,000,000*l.* annually, in the necessities of life for themselves and their families; consequently every reduction in price, or every saving that can be effected, is to them equivalent to an advance in wages, thus every 5 per cent. saved means the addition of no less than fifteen millions sterling to the national annual wages sheet.

The exception referred to is the profitable employment of the vast numbers of home food-producers, without which it would not be possible to provide occupation for the labouring classes.

The largest producing class we possess are our own agriculturists, and so wide is the extent of their operations, that an addition of only 5 per cent. to the outcome of their crops, the wholesale value of which is calculated to reach an annual total of 245,000,000*l.*, would constitute such an enormous sum as to be sufficient to make an appreciable addition to the wealth of the country and create the difference between good and bad seasons.

The official returns show that exclusive of our Colonies we purchase from foreign

countries (who exclude our manufactures) meat and dairy produce to the extent of forty-three million pounds sterling annually. The above particulars, coupled with the grand exhibits at the recent exhibitions and dairy shows, furnish abundant evidence that Ireland and the agricultural districts of England and Scotland can supply the whole of our requirements in that direction, and so enable the money now sent abroad to remain at home for re-expenditure with our working classes.

Therefore, the questions in connection with the supply of foods are entitled to the constant and most serious attention on the part of the working classes throughout the country, in order that our available home production of Meat, Fish, and Fruit may be largely increased and more beneficially utilized, so that our future supply of foods may be derived as much as possible from within the limits of the United Kingdom ; when, if properly and economically prepared for consumption, they would yield such increased supplies as would render us to a great extent independent of foreign sources.

The attainment of the objects in view, simply requires the people to spend their money with reflection and forethought, when, as a natural consequence, a more effective contri-

bution to their personal and domestic welfare will be secured.

Good-will and faith between the industrial and agricultural classes are the largest efforts necessary to bring about the improved condition of things. The difficulties that are brought into existence by apparently imperceptible wastes and expenses will be drifted out of existence by the same means. These the working classes can bring about, and they should consider the subject thoughtfully and discuss it thoroughly at every opportunity that presents itself. The members of every local Co-operative Store, Working Men's Club, Trade Society, Templars or Temperance Lodge, should meet and pass a resolution to the effect that "It is advisable and necessary to consume home-grown produce in preference to imported on all occasions where it can be obtained at the same prices and equal conditions."<sup>1</sup>

Meanwhile, with the view of inducing the large number of co-operative stores throughout the country to deal direct with farmers for home-grown produce, an effort should be made to create and encourage an interest in the sub-

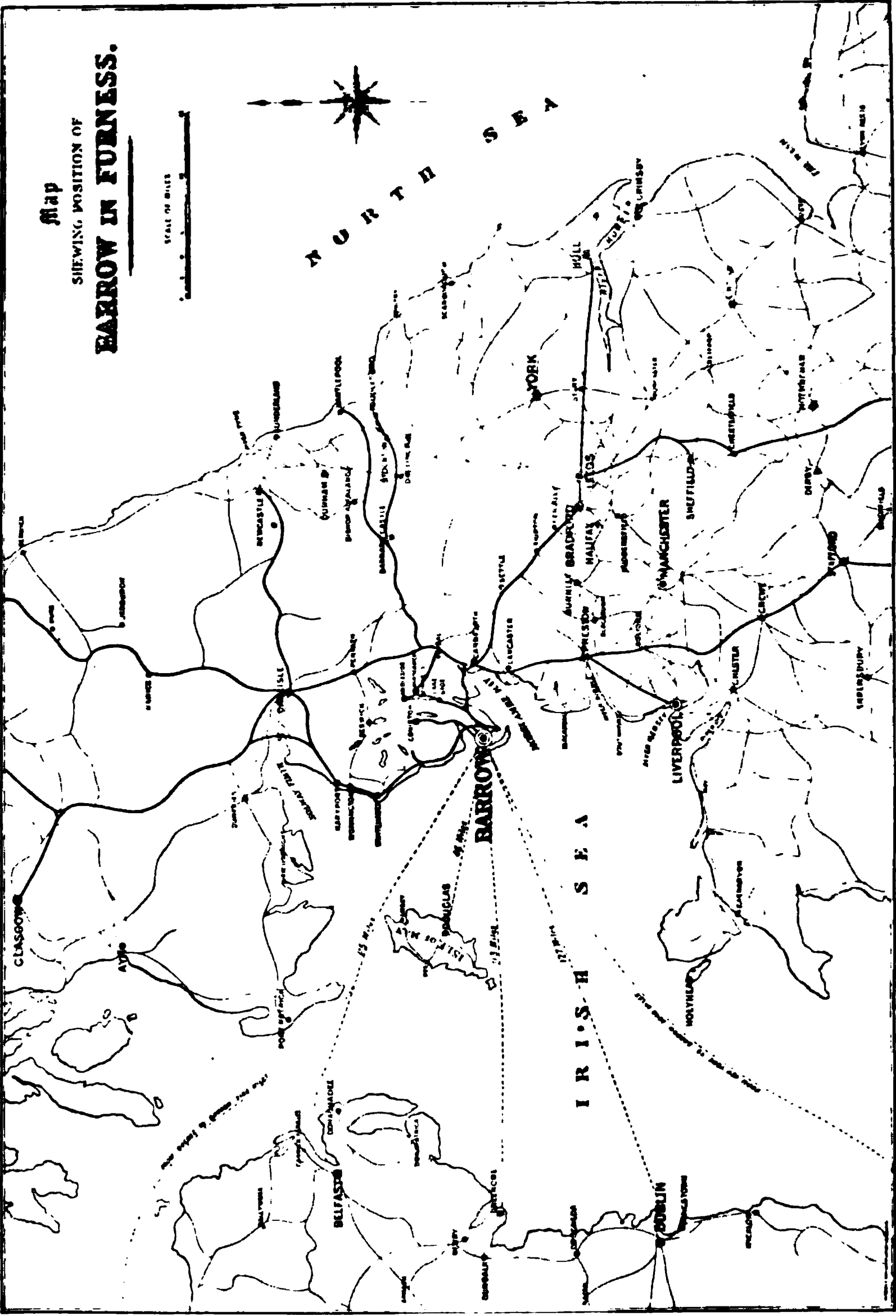
<sup>1</sup> Copies of these resolutions, if sent to D. Tallerman, 50, Redcliffe Road, London, S.W., will be placed before the Agricultural Organization of the local district.

ject of Agricultural and Industrial Union, by promoting a series of special meetings among members of all the Co-operative Societies, Working Men's Clubs, Trade Societies, Farmer's Clubs, Chambers of Agriculture, Agricultural Societies, and other organizations of both classes, for the consideration of definite subjects relating to food distribution and its preparation.

A committee formed upon a non-political basis, whose members represented Landowners and Farmers, Employers and Artisans, should speedily elicit valuable information that would powerfully impress the classes and the masses, and lead to effective and beneficial results being secured.

Having directed attention in the preceding pages to the principal anomalies that exist in connection with the production and distribution of our home-grown foods, and the means by which they may be remedied, I complete my self-imposed task by adding a detailed description of the means that exist, in one direction at least, that will enable the highly-desirable changes to be made in the present condition of things, and so contribute much to the national welfare if promptly brought into practical operation by the landed, agricultural, and industrial classes.





MAP SHOWING THE RAILWAYS CONNECTING THE BARROW ABATTOIRS WITH THE GRAZING, MANUFACTURING, AND MINING DISTRICTS.

The readiness with which this great work may be initiated, and the glaring anomaly of neglecting the facilities we possess, may be vividly seen by the illustration of the extensive cattle lairs, slaughtering and refrigerating chambers that exist at Barrow-in-Furness, which the directors of the Furness Railway have not only kindly permitted me to insert, but have also placed the establishments at my disposal for the purpose of enabling the measures I have suggested to be carried into operation by those interested; at the same time intimating their intention of affording their best assistance in the way of railway rates to any movement that may be made for the purpose of establishing the system of the concentrated slaughter of live stock, and the direct distribution of the meat to the retail butchers and co-operative stores in their district.

The opportunity that is thus afforded to the producers and consumers of the North of England being brought within reach of each other to their mutual advantage, will be appreciated by thinking minds, and the illusion as to the impossibility of the two classes meeting dispelled.

Plate No. 1 shows the situation of Barrow-in-Furness and the surrounding counties, with the



railway facilities, that furnish connecting-links to the Grazing, Manufacturing, and Mining districts in all directions—enabling producers to send their live stock to Barrow at a nominal cost—the charge for large waggons from Lancashire, Yorkshire, or Cumberland being such as to enable cattle to be sent at about five shillings each.

The Co-operative Map at page 244 shows that the northern counties contain 507 Industrial Co-operative Societies, with 550,172 members, thus furnishing at once an available concentrated purchasing power of a very great extent for the disposal of the meat. While the markets of London, Manchester, Birmingham, and other large towns are within easy reach.

Plate No. 2 is a general view of the site of the whole of the buildings, including Lairs, abattoirs, chill-rooms, &c., which exhibit their extensive character and facilities for the approach, reception, and despatch of stock.

Plate No. 3 is the interior of one of the lairs or barns for housing the animals, where they may remain at rest and be quietly fed for a sufficient time to allow of their attaining the best possible condition for slaughter. The lairs, which have ample accommodation

GENERAL VIEW OF THE CATTLE LAIRS, ANATTOIRS, AND CHILL ROOMS AT BARROW-IN-FURNESS.

PLATE 58







for 1000 beasts, are well lighted, ventilated, and drained, the fittings for the supply of water and food to the animals being of the completest character for the purpose.

Plate No. 4 shows the interior of the abattoir, or slaughtering-chambers, which are roomy, extensive, well ventilated, and drained, with an abundant supply of water, and fitted with all the most recent and effective appliances for allowing animals to be humanely dealt with, and the meat treated with scrupulous cleanliness and care, thereby furnishing advantages that will be fully appreciated by the public when known.

Plate No. 5 exhibits the interior of the chill-rooms, wherein the carcasses are deposited after slaughter, in a fresh and pure atmosphere, to allow of the animal heat being eliminated, and meat to ripen, so as to attain the best possible condition for consumption, and where they may remain without fear of deterioration—until required for sale—and from whence the meat may be sent direct to the retail butcher without the intervention of any middlemen. Farmers may thus see that the practical means by which they may reach consumers are in actual existence, and freely at their disposal.

The advantages thus shown to exist in the

North are also to be found in the South, as at the Bristol Docks similar accommodation has been provided, which the farmers of the counties of Cornwall, Devon, Hereford, Gloucester, Wiltshire, Somerset, Dorset, Monmouth, Glamorgan, and Brecon, could utilize for their live stock, and receive nearly two and a half millions extra profit for their meat crop; while the miners and artisans of the Midland and South Wales districts would receive a larger quantity of home-grown meat than they do at present.

**COUNTIES SURROUNDING BRISTOL WITH CATTLE,  
SHEEP, AND PIGS.**

| 1888.                                         | Cattle.                      | Sheep.                        | Pigs.                                         |
|-----------------------------------------------|------------------------------|-------------------------------|-----------------------------------------------|
| Gloucester.....                               | 113,314                      | 374,018                       | 70,937                                        |
| Wilts .....                                   | 99,733                       | 626,132                       | 69,541                                        |
| Somerset .....                                | 217,728                      | 557,857                       | 123,901                                       |
| Dorset .....                                  | 83,607                       | 426,254                       | 53,749                                        |
| Monmouth .....                                | 45,372                       | 178,879                       | 16,527                                        |
| Hereford .....                                | 84,300                       | 360,228                       | 24,795                                        |
| Devon .....                                   | 251,310                      | 835,441                       | 96,739                                        |
| Cornwall .....                                | 190,574                      | 440,591                       | 75,700                                        |
| Glamorgan .....                               | 52,231                       | 279,102                       | 15,293                                        |
| Brecon ... ..                                 | 37,141                       | 396,280                       | 8,848                                         |
| Total.....                                    | 1,175,310                    | 4,474,782                     | 556,030                                       |
| Proportion available for<br>consumption ..... | 25 % =<br>293,827            | 42 % =<br>1,879,418           | 87½ % =<br>486,526                            |
|                                               | at £15 pr.head<br>£4,407,405 | at 36/- pr.head<br>£3,382,952 | avg. 134 lb.ca.<br>5½d. per lb.<br>£1,494,040 |











Showing an annual trade in live stock of £9,284,397 without any organized system of slaughter and realization, while a most complete establishment exists in the district and lies dormant and unused; yet our farmers complain of distress and foreign competition, which only succeeds by reason of those engaged in the trade acting upon a sound common-sense basis.

To arrive at a practical result, it is essential that a few gentlemen should form a council with an executive committee to actually carry out the slaughter and realization of a small number of animals daily for a given time—carefully noting and publishing the results for the information of the farmers throughout the country. If such a movement did not at once obtain the full measure of success, it certainly would elicit a considerable amount of useful and valuable information. One thing might be fully relied upon, the assured supply of meat would create the demand and enable it to be readily sold at current prices, so that, under no circumstances could the pursuance of this course leave any worse result than is obtained at present; while a definite lesson would be taught the producers how to reach the consumers.

There may be many active, practical minds who would take much pleasure in furthering a movement of this character, did they know how the initial step could be taken. I shall be pleased to receive communications from them, and arrange for a meeting of those interested.

D. TALLERMAN.

50, Redcliffe Road,

March 29th, 1889.

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*Extract from Address by SIR FREDERICK  
BRAMWELL, D.C.L., F.R.S., M. Inst. C.E.,  
President to the British Association for the  
Advancement of Science, Bath, 1888.*

“In this climate of ours, where the summer has been said to consist of ‘three hot days and a thunderstorm,’ there is hardly need to make a provision for cooling our houses, although there is an undoubted need for making a provision to heat them. Nevertheless, those of us who have hot-water heating arrangements for use in the winter would be very glad indeed if, without much trouble or expense, they could turn these about, so as to utilize them for cooling their houses in summer. Mr. Loftus Perkins, so well known for his labours in the use of very high-pressure steam (600 to 1000 lbs. on the inch), and also so well known for those most useful high-pressure warming arrangements which, without disfiguring our houses by the passage of large pipes, keep them in a state of warmth and comfort throughout the winter, has lately taken up the mode of, I will say it, producing ‘cold’ by the evaporation of ammonia, and, by improvements in detail, has succeeded in making an apparatus which, without engine or pumps, produces ‘cold’ for some hours in succession, and requires, to put it in action, the preliminary combustion of only a few pounds of coke or a few feet of gas.

“As I have said, our climate gives us but little need to provide or employ apparatus to cool our houses, but one can well imagine that the Anglo-Indian will be glad to give up his punkah for some more certain, and less draughty, mode of cooling.”

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## BREAD-BAKING BY STEAM.

(Extracted from the *Leamington News and Warwick Herald*, October 3, 1885.)

Bread-baking is among the latest of the many uses to which steam has been applied. Like many other excellent inventions, the oven is very simple in construction, but it is found to answer its purpose most thoroughly, and to possess many advantages over the ordinary ovens. One of the primary advantages of this new system, which has been patented by Messrs. A. M. Perkins and Son, engineers, Seaford-street, London, W.C., and has gained medals at Paris, Manchester, and Philadelphia, is that in the bake-house proper there is no fire, and consequently no smoke or smut can get about, while the workmen are able to perform their duties without being subjected to excessive heat. Inside, the oven is lime-washed, and it is beautifully clean, as nothing in the shape of fire or smoke can get near it to sully its whiteness. The bottom does not require to be "scuffed out" with wet cloth as in the old plan. Along the top and bottom run a series of wrought-iron tubes, which pass through the brickwork at the back of the oven into the furnace, being inclined towards the latter, for the purpose of keeping the water at the fire end. The tubes are partially filled with water, and the ends of those which form the floor of the oven also serve as the bars of the furnace. The tubes are fixed in the oven side by side, in parallel lines—one row being placed under the floor of the oven, and the other under the top inner surface of the oven. These tubes are securely sealed; and, as the steam cannot escape, there is no necessity of providing a fresh supply of water. Inside the oven the tubes which form the floor are covered with thin iron plates; and the ends of the top tubes, after passing through the back of the oven, curve over the furnace. In this way all the tubes are heated at once, and but a very short space of time is occupied in getting the oven ready for use. A thermometer attached to the oven indicates the degree of heat, which, for baking purposes, is about 440 deg. Fahrenheit, but by an arrangement of the flues, the temperature can be raised or lowered at will. Being perfectly under control and observation, the

heat in every part of the baking surface is quite uniform. A whole batch of bread can accordingly be baked to nearly the same degree of brownness without the necessity of being shifted, a process inevitably associated with common ovens, where, unless most carefully watched, a portion of a batch may burn, while another portion may be only partially baked. The oven will bake any kind of bread as well as it can possibly be baked, from the smallest goods to cakes of 50lbs. weight. There is no communication between the fire and the oven; all dirt and sulphurous vapours are accordingly kept away from the bread, which is, therefore, so much the sweeter and purer. Another recommendation in favour of Messrs. Perkins' patent is that the oven being kept at a uniform heat, it does not require to stand after a batch has been drawn for the purpose of being re-heated; and a great saving of time is effected by putting in the succeeding batch as soon as the previous one has been removed. Nothing but coke is burnt in the furnace; hence the consumption of fuel is very economical as compared with the ordinary oven. As the fire is kept in from Monday morning to Saturday night, the baking apparatus is ready for use at all times.



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## A FEW WORDS ON CHILDREN'S DINNERS.

By D. TALLERMAN.

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THE numerous inquiries that continue to be made on the subject of Penny Dinners, induces me to state a few words that may prove useful in many directions. The principle that guided me in their first production at Norton Folgate, in 1868, and that the experience to the present date has strengthened, is embodied in the simple fact that by mincing meat before use, not only is a greater nutritive result obtained, but the meat becomes more digestible. The great value of this practice arises from its extreme simplicity and the readiness by which it can be brought into active operation. As an illustration of this, I quote an extract from the most recent letter I have received, under date March 5th, 1889. Mr. R. T. Smith, superintendent of the Ragged School, Chiswick, writes:—"The minced meat materially has reduced the cost of producing the meals. 25 lbs. now serves our purpose instead of 30 lbs. as before for the same number. The children clear their plates, and like their dinners much better." This effective result is in a great measure due to the "Enterprise Meat Chopper" that was used for mincing the meat, which fulfils all the essential requirements for the purpose better than any other mincer that has come under my notice, its simplicity of construction being such that nothing can get out of order, while it can be taken apart and cleaned in a few seconds. Its cost is small, and it may be worked by a child, as may be seen by the annexed plates. No. 1 shows the machine taken apart, and No. 2 when at work. The working is simple; the meat is placed in the funnel and the handle turned, when it comes from the machine perfectly and evenly minced, the feed screw having driven the meat forward to the perforated plate, against the face of which the knife blades have continually passed and snipped off or separated that portion of meat that had been pressed into the perforation. The advantages of these machines over those hitherto in use are so great, that it is but a question of time for their entrance into every household. They range in size from one that weighs but 4½ lbs., chops 1 lb. per minute, and costs 8s. 6d. upwards. They work rapidly, and noiselessly. In America, where meats are minced and made into every variety of dish, the "Enterprise Chopper" is as much a portion of the kitchen equipment as the stove itself. When we, as a people, begin to appreciate the economical and dietetic values secured by mincing our fresh or cold meats, the expenditure of every household will be materially reduced and the health of the people improved.

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**FEED-SCREW.**  
Showing Machine taken apart

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| 10.    | „ 2 lbs. „                                    | ... | ... | ... | 0  | 12 | 6 |
| 12.    | „ 2 „ „                                       | ... | ... | ... | 0  | 10 | 6 |
| 22.    | „ 3 „ „                                       | ... | ... | ... | 0  | 16 | 6 |
| 32.    | „ 4 „ „                                       | ... | ... | ... | 1  | 5  | 0 |
| 42.    | „ 5 „ (Pork) per minute                       | ... | ... | ... | 3  | 2  | 6 |
| 51.    | For Power. Capacity 500 lbs. Beef per hour... |     |     |     | 12 | 10 | 0 |
| 52.    | „ „ „ „ „                                     |     |     |     | 21 | 0  | 0 |
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Page vii. Advt

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